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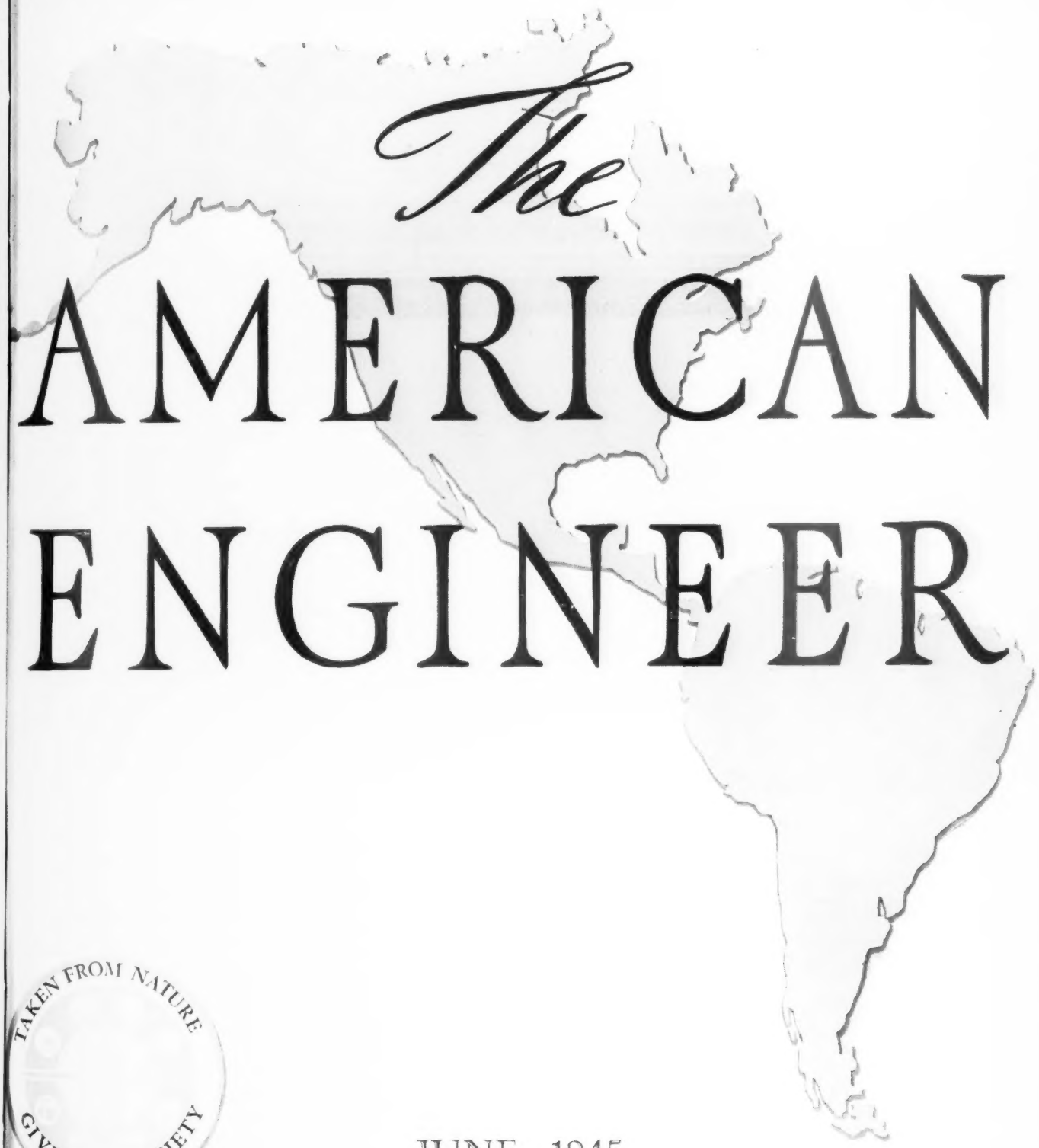

The AMERICAN ENGINEER

TAKEN FROM NATURE
GIVEN TO SOCIETY

JUNE, 1945

It doesn't make sense, folks

A man's a fool to go around with his pants pocket burning with extra folding money when he ought to buy an extra Bond, because that loose lettuce is the stuff inflation is made of. When that extra dough goes hunting for civilian goods (that are as hard to find as Crosby in a tuxedo!), it tends to push up prices. Besides, it doesn't make sense when twelve million kids are fighting our battle for any of us to hike up the cost of living by buying anything we can live without.

Bob Hope

ONE PERSON CAN START IT!

You give inflation a boost . . .

—when you buy anything you can do without

—when you buy above ceiling or without giving up stamps (Black Market!)

—when you ask more money for your services or the goods you sell.

SAVE YOUR MONEY. Buy and hold all the War Bonds you can afford—to pay for the war and protect your own future. Keep up your insurance.

HELP US KEEP PRICES DOWN

A United States War message prepared by the War Advertising Council; approved by the Office of War Information; and contributed by this magazine in cooperation with the Magazine Publishers of America

THE AMERICAN ENGINEER

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Acting Editor
EDWARD LARSON

* * *

Business Manager
FREDERICK H. ZURMUHLEN

* * *

Publication Committee
CHARLES W. BURKE, *Chairman*
RAYMOND M. FULLER
ALONZO L. JONES
WILLIAM H. LARKIN

* * *

Editorial, Advertising and Business Offices
6 Church Street,
New York 6, N. Y.

to which all matter intended for publication in the American Engineer should be addressed.

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THE NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS
Headquarters: National Press Building, Washington, D. C.

President
HARRY E. NOLD
Lord Hall, O.S.U.
Columbus, Ohio

Vice-President
RITCHIE LAWRIE
321 North Front Street
Harrisburg, Pennsylvania

Vice-President
A. F. MITCHELL
P. O. Box 434
Corsicana, Texas

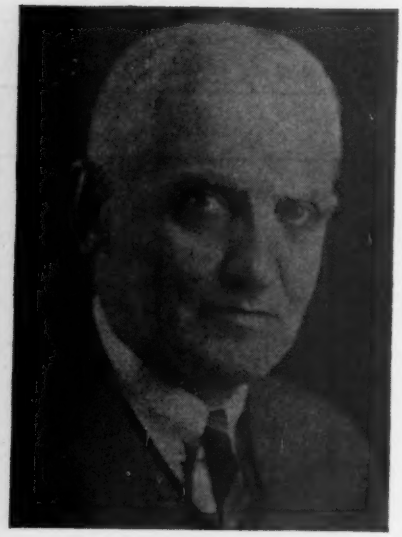
Vice-President
BRUCE WILLIAMS
P. O. 264
Joplin, Missouri

Treasurer
LEO H. CLEARY
2726 Conn. Ave., N. W.
Wash., D. C.

Executive Secretary
EDWARD LARSON
937 National Press Building
Washington, D. C.

Vice-President
WILLIAM L. THRAILKILL
1107 W. 7th Avenue
Spokane, Washington

IN MEMORIAM



MAJOR THOMAS W. BATTIN

Major T. Wilson Battin, Charter Vice-President of N.S.P.E., and first State President of the Pennsylvania Society of Professional Engineers and later Executive Secretary until 1940, died at his home in Philadelphia on March 21st, five days before his 71st birthday.

Major Battin was educated at the University of Michigan, University of Glasgow, Scotland, and University of Paris, France. His professional experience was long and varied, beginning with his appointment as assistant engineer to the Chicago and Northwestern Railway Company. Among the many positions held by Mr. Battin were; Assistant to Admiralty Manager, Fairfield Shipyard, Glasgow, Scotland, Naval Architect, Newport News Shipbuilding Company, Chief Draftsman, William Cramp & Sons Ship and Engine Building Company, Scofield Engineering Company, Civil Service Corporation of Philadelphia, of which he was vice-president and advisory engineer from May 1915, to July 1938 and Inspector to Senior Assistant Engineers, Department of City Transit, Philadelphia, from which position he retired on pension in January, 1944. At the time of his death, Major Battin was actively connected with transit operation and traffic, Statistician, Department of City Traffic.

Major Battin had many lodge affiliations and was a 32nd Degree Mason. He was an Elder and Trustee of the Holmesburg Presbyterian Church. During the first World War he served in the Army as a Major.

Major Battin designed the State Pin, and organized Chapters thruout State according to Legislative Districts. He took the ball passed by Dr. Steinman of New York when he came to the Engineers Club looking for someone in this State to organize Pennsylvania.

The National Society then consisted of New York, New Jersey and Major Battin of Pennsylvania. By his persistence the Pennsylvania Society started with one member (Major Battin), then the 10 Charter Members; to the present 9 Chapters and 911 members.

Surely it can be said — "Well done, thou good and faithful servant, thou hast attained your reward."

GEORGE TILLEY SEABURY

George Tilley Seabury, executive head of the American Society of Civil Engineers for twenty years, died at the Post-Graduate Hospital in New York City of a coronary thrombosis. His age was 65. Mr. Seabury was also a member of the New York County Chapter of N.S.P.E.

Born in Newport, R. I., son of T. Mumford and Mary Tilley Seabury, Mr. Seabury received a Bachelor of Science degree in civil engineering from Massachusetts Institute of Technology in 1902. He immediately entered the field of heavy engineering construction, serving several construction corporations in New York, including the Subway Construction Company, the O'Rourke Engineering and Contracting Company, the United Engineering and Contracting Company, and I. C. Rodgers Company, now Rodgers & Haggerty. His activities included work on construction of Grand Central Terminal and Riverside Drive, south of the George Washington Bridge.

During the first World War he served as a major in the Army's Quartermaster Department, supervising construction at Camp Devens, Upton, Mills, Merritt, Dix, Meade and Lee.

Mr. Seabury was president of the Engineering Societies Personnel Service, Inc; vice president of the American Engineering Council, secretary of the Engineers Council for Professional Development, the Engineers Joint Council and the Committee on the Organization of the Engineering Professions as a Whole. He was an honorary member of the Koninklijk Instituut Van Ingenieurs, Netherlands engineering society; the Engineering Institute of Canada and Tau Beta Pi and Chi Epsilon, honorary engineering fraternities. He was a member of Delta Upsilon fraternity and of the Masons.

A. V. Sheridan Retires As Editor

American Engineer To Be Edited from N.S.P.E. Headquarters

As this issue goes to press, the Editor of the American Engineer finds himself preparing for a trip to Europe on a confidential mission for the United States Government. While it is not anticipated that this mission will require a protracted absence, it will be of such duration as to preclude continued publication under his direction. In the light of these circumstances it is essential that the editorial responsibility be transferred to other hands. The American Engineer for June will be completed and edited under the direction of the Executive Secretary of the National Society of Professional Engineers.

In relinquishing his responsibility for the editorial matter of the official publication of N.S.P.E., the Editor wishes to acknowledge the trust imposed in him for ten of the fourteen years of the existence of the American Engineer. Established in 1931 as the official organ of the New York State Society of Professional Engineers, it later became the publication of the New Jersey Association of Professional Engineers as well and, in 1935, was released to the National Society when the State Professional Society Movement sufficiently coalesced to make possible a nationwide organization of engineers recognized by the laws of their various states as professional practitioners. Except for a period of several years, beginning with his election to the Presidency of the National Society, the retiring Editor has procured, compiled, edited and, to a large extent, written the material that has appeared within its pages. He must therefore accept responsibility for its contents.

Separation from the voluntary task in question is made with mingled emotions. Relief from an arduous role is accompanied by regret born of the resultant lessening of close association with the movement that had its inception in the office of the said Editor and which has presently become a nationwide influence in the affairs of the calling with which he has been identified and whose general improvement as an agent of Society, as well as a learned profession, has been a fond hope these many years.

Throughout its existence, especially as a national publication, the American Engineer has consistently adhered to the policies under which it was launched and which were restated in the editorial of its initial issue as the official publication of the National Society of Professional Engineers in January 1935. It is unnecessary to suggest that whatever its form, the American Engineer will continue with such policies as the basis for its existence.

Serving no personal or group interests, the publication contemplates only the advancement of the aims, and the expansion, of the professional society movement in accordance with the modus operandi called for under its constitution. That a publication of this nature is essential to the promotion of the Society and to the dissemination of news concerning its activities is too obvious to need comment. That the American Engineer, despite its extremely limited facilities, is in part fulfilling its function is evidenced by the fact that correspondence reaching the desk of the Editor, presently comprehending several hundred communications a month, has been increasing steadily during the past several years.

With the conclusion of hostilities in sight, the opportunity for improving and expanding the value of the American Engineer appears imminent. Increased membership, increased circulation and increased advertising can justly be envisioned for the near future. The steady growth of the National Society, especially the strength and influence of certain member state organizations within their respective areas, is evidence that the professional movement is well on its way toward the objectives of a unified, publicly recognized, ethically regulated and conducted, and technically improved profession whose influence upon the social and economic life of the nation will be reflected among its members. The recent expression from without the membership of the Society calling for an organization representative of the entire profession eloquently proves the case for N.S.P.E. That its form is well nigh indispensable for effective organization is borne out by the experiences of the legal and medical professions as well as many other influential groups throughout the country. In all its endeavors, the American Engineer is an essential part of the National Society program.

In relinquishing the Editorship, one would be remiss did he fail to note the cooperation of those who have submitted material and otherwise made possible the publication. Especially does one wish to record his sincere thanks to Frederick H. Zurmuhlen, who has so long managed the business affairs of the American Engineer and to the late Robert Hall Craig who for four years carried on under strain and handicap as its Editor. These men, at considerable personal sacrifice, assumed duties and responsibilities that should not pass unnoticed.

The Editor bespeaks, in behalf of Secretary Larson and others who may assume responsibilities in connection with publication, the collaboration and assistance of the various state societies and their chapters. This is indispensable to the success of the publication. In order to facilitate compilation of material and preparation of copy, all sources of news and all correspondents are requested to contact the Washington office for further instructions. With cooperation forthcoming, the American Engineer will continue to expand its usefulness as a messenger to both public and profession.

Arthur V. Sheridan

The Engineer In Training

By H. E. NOLD, *President*
National Society of Professional Engineers

The Engineers Registration Laws in the several states wisely recognize that when a man graduates from an engineering college he is not competent to assume a responsible position in his chosen profession. Accordingly the laws provide that in addition to graduation from an approved course in engineering of four years or more the applicant for registration as a professional engineer must have a specific record of an additional four years* or more of active practice in engineering work of a character satisfactory to the board, and indicating that the applicant is competent to be placed in responsible charge of such work. This post graduate period of maturing through work in his chosen field is an important and necessary part of the education and training of an engineer.

Although necessary, this post graduation experience-gaining period has two decided disadvantages:

(1) After four years spent working, usually in some rather limited area in engineering, the person, although enriched in experience and matured in judgement, has become rusty in parts of many fundamental subjects such as mathematics, theoretical mechanics, thermodynamics and hydraulics, parts of which he has probably used only in a limited way or not at all. Consequently he is faced with the alternative of spending long hours in refresher study or risking failure in his qualifying examination, particularly if his registration board gives a highly theoretical examination. The result is that too many young men, particularly those employed in exempt positions, fail to qualify for registration, frequently to their later regret.

(2) Another disadvantage is that all too frequently, due to being absorbed in their technical work and associating with engineers who do not stimulate them to study the professional aspects of engineering, persons qualify for and become registered engineers without realizing their ethical obligations. Being a professional man is much more than merely being technically proficient.

*Less than four years in a few states.

HARRY E. NOLD, *President N.S.P.E. Born—Ohio* 1883. *Educated Ohio State University. Professor—Mining Engineering. Director—Engineering and Science Defense Training O. U. Past President —Ohio Society P. E. Author. Active in Educational and Prof. Circles.*

In order to help the engineering graduate overcome these two disadvantages the title and status "Engineer in Training" has been developed and legalized in several states. Other states expect to change their laws to include the "Engineer in Training" in the near future.

Under this plan the applicant for a certificate of registration as a professional engineer is permitted to take the prescribed examination in two stages. The first stage of the examination may be taken by the applicant at any time after he has graduated from an accredited college course in engineering of not less than four years.

This first stage of the examination will test the applicant's knowledge of fundamental technical subjects including mathematics and the basic sciences. In other words, this first examination is designed to be a test of proficiency in the technical and scientific subjects studied in college. When the applicant has successfully passed the first stage of the examination he is given an appropriate certificate showing his legal status as an "Engineer-in-Training."

After completion of the required years of satisfactory experience the "Engineer-in-Training" may take the second stage of the examination which covers the more advanced professional training of engineers as amplified and matured by practical experience and is designed to test the applicant's ability to apply his technical knowledge and experience to the actual practice of his profession.

At present our engineering students are inducted into the Armed Forces of our country as soon as they reach eighteen years of age. Consequently there are now very few graduating in engineering and therefore very few "Engineers-in-Training." After the war ends engineering colleges are anticipating large enrollments. When this day comes N.S.P.E. through its Member State Societies will have both a great opportunity and a great responsibility. An opportunity to encourage and advise engineering graduates to qualify at once as Engineers-in-Training" and a responsibility to provide through our several state societies an opportunity for the "Engineers-in-Training" to associate with practicing professional engineers and to participate in their discussion of professional problems.

Membership in N.S.P.E. is limited to Professional Engineers, i.e., persons licensed to practice professional engineering in one or more of its branches in accordance with the statutes of the state or possession in which they permanently reside and practice. This should not be changed. "Eng-

(Continued on page 21)

The Engineer-In-Training

A Progress Report

By EDWARD LARSON, *Executive Secretary*
National Society of Professional Engineers

Traditionally the month of June is the month of Commencement at the universities in the United States. It is the time when we would normally see the emergence from the Engineering Colleges of the future members of the profession ready to take their second step toward full professional status. They would be seeking the opportunity to enter upon their period of training in the ranks of industry.

Ever since the beginning of the growing pains of the Profession of Engineering which are resulting from acquiring a fully developed professional consciousness, there has existed but a hazy understanding of the steps by which a person has entered the profession. There has even been a seeming inability on the part of the profession to recognize these steps. It is true that entry into the practice of the profession iself was greatly clarified when legal qualification was started in 1907 by the state of Wyoming, and has subsequently been much further clarified in 45 of the other States and 4 of the U. S. possessions by acts licensing the practice of "Professional Engineering" wholly or in part.

The position of the engineering student has been clearly defined only if he has been matriculated at a recognized institution of learning.

But for the period between graduation and licensing the position and designation of the person in that period has been hazy indeed.

The Canadians have been far ahead of their United States cousins in an understanding of all of that is implied. The Canadian engineers, for many years, have recognized and clearly designated the three steps toward professionhood, namely, (1) the Engineering student, (2) the Engineer-in-Training and (3) the Professional Engineer.

It remained for the embryo engineers themselves to bring the thinking of the profession in the United States into focus. This occurred at the 1941 Annual Meeting of the New York State Society of Professional Engineers as the result of a group of engineering undergraduate and fellowship students asking for and being granted time and place for conducting a forum under the auspices of said society. Two prepared papers were presented (see American Engineer — May-June 1941 pages 9 and 10) and the whole problem thoroughly discussed. As a result of this, a resolution was adopted as follows:

EDWARD LARSON,
Executive Secretary, N.S.P.E. Born—Minneapolis, Minn. Educated—Univ. Cincinnati. Present Exec. Secretary —N.S.P.E. Former V. P. and Director—Ohio Society P. E. Former Consulting Engineer. Devoted to Prof. Society affairs.

Whereas, persons who are graduated from accredited engineering colleges are not eligible to take examinations for licenses as professional engineers until they have obtained at least four years experience of a grade and character satisfactory to the State Board of Engineering Examiners, and

Whereas, during these four years such persons are not legally recognized as engineers nor qualified for affiliation with state professional engineering societies, and

Whereas, during this period of training such persons, thrown upon their own resources and without the organized guidance and protection of the legally constituted engineering profession, are subject to technical and economic exploitation, therefore, be it

RESOLVED, that the Metropolitan Conference of the Student Chapters of the American Society of Civil Engineers, does hereby request the New York State Society of Professional Engineers to petition the New York State Board of Engineering Examiners to amend its rules so as to permit candidates who have been graduated from approved engineering schools or who have otherwise met the educational or equivalent requirements, to take preliminary written examinations in engineering fundamentals at any time subsequent to the fulfillment of such requirements; with the understanding that a final examination for admission to the practice of engineering or to use designation "Professional Engineer" will be mandatory upon the completion of the required experience period, and be it further

RESOLVED, that the said Metropolitan Conference of Student Chapters does also petition the New York State Society of Professional Engineers to establish under its direction, and subject to its constitutional requirements, an affiliate association which would permit persons who have satisfactorily passed the preliminary examinations, to become members thereof and to be designated as "Engineers-in-Training".

The foregoing petition was duly received and favorably considered by the New York State Society of Professional Engineers. Conferences were held with the New York State Board of Engineering Examiners and the procedure worked out which would enable that Board to carry out the first part of the petition. To produce the desired results the Board decided that the Professional Engineers' examination could be given in two stages. The first stage would cover the fundamentals and the examination could be taken at anytime subsequent to graduation. Upon successfully passing this stage the Board of Examiners would issue a certificate which would proclaim the holder thereof as an Engineer-in-Training.

In the meanwhile the United States entered the war with the attendant chaos which has resulted in the ranks

of the engineering students and recent graduates. In spite of this four groups have been examined since the start of this system in the State of New York and approximately one hundred fifty have successfully passed and have been certified as Engineers-in-Training.

In other states the Board of Examiners have found that their state's act precluded two stage examination and the certification of Engineers-in-Training. The Georgia Act has been amended to cover this and is now in effect. This is likewise true of the Minnesota Act. The Ohio Act has been amended and the certification of the Engineer-in-Training goes into effect January 1, 1946. The amended Pennsylvania Act covers this phase and becames effective June 30, 1946.

In consulting the second part of the petition presented at its 1941 Annual Meeting the New York State Society's Committee gave much thought as to the form that the requested affiliate organization should take. The plan finally presented for consideration is interesting and well worth considering and is as follows:

A PLAN FOR SPONSORSHIP
BY
THE NEW YORK STATE SOCIETY OF PROFESSIONAL ENGINEERS, INC.
OF
A PROPOSED ORGANIZATION
TO BE KNOWN AS
NEW YORK STATE SOCIETY OF ENGINEERS-IN-TRAINING

At the Annual Meeting of the New York State Society of Professional Engineers, Inc., held at the Hotel New Yorker, in New York City on May 8th, 1943, the Society adopted the report of its Special Committee on Engineers-in-Training and now stands ready to assist in the formation of an organization of and for young men entering the engineering profession who have successfully passed the prescribed examinations and have been duly certified by the Education Department of the State of New York as entitled to be known as Engineers-in-Training, whenever twenty-five or more persons so certified petition the Society for such assistance.

This action resulted from exhaustive consideration of the question as to how the Society might best serve the public and the engineering profession, as well as these prospective members of the profession during the period of their career between graduation from an engineering school and their recognition by the State as persons competent to practice.

The proposals finally adopted were largely determined by the suggestions of the considerable number of young men who were consulted by the Special Committee during the past three years. The plan proposed is flexible and is intended to encourage the formation and orderly development of a type of organization which actual experience will show to be best suited for the accomplishment of the desired ends. The Society proposes to assume only the roll of counselor and guide. It does not propose to dictate.

Since the underlying purpose is to expedite the development of young men to full professional status, it is believed that an important means to this end may be found in a separate organization conducted by the young men themselves. Experience seems to point to the fact that the younger members of any large organization have all too little opportunity for active participation in its affairs, as a result of which they may become somewhat discouraged and their development may even be retarded. Moreover, it should be possible to operate such an organization of the younger men more economically, which means lower dues for them. If the proposed organization operates under the sponsorship and guidance of the Society, it will be possible for the Society to assist very tangibly, but without direct subsidy, in such matters as general headquarter's office facilities and the expense of meetings.

The Society feels that the way to learn is to do, and that if the proposed organization of Engineers-in-Training does function successfully, the Society itself will profit in the future by the addition to its membership of more fully developed and trained young men. Incidentally, the plan for the proposed organization of Engineers-in-Training contemplates that it shall consist only of Engineers-in-Training or, in other words, that when the young man obtains his license to practice professional engineering, his membership in the Society of Engineers-in-Training shall automatically terminate. Such a provision seems necessary if the foregoing philosophy is to be perpetuated and if the establishment of just another engineering society is to be avoided.

During the conferences with some of these young men in recent years, a tentative Constitution for the proposed organization was drafted.

The type of organization contemplated in the tentative Constitution is state-wide, with provision for local chapters. This follows the pattern of the Society's own organization and would enable this Society to be of direct assistance in both fields of activity.

Until such an organization is established as a going concern, this Society plans to make provision for meetings of Engineers-in-Training in conjunction with its own annual meetings, and will welcome the attendance of Engineers-in-Training at any of its state and local chapter meetings. If you would like to receive notices of these meetings, the Society will be glad to place your name on its mailing list.

Anticipating the time when the war would be over and there would be a sufficient number of Engineers-in-Training available to enable them to function as a group, thought was given to the actual organization. In the discussion which attended the development of the resolution set forth at the beginning of this article the students had stressed the desire for counsel and guidance from those who had arrived at a full professional status. This was embodied in the outline of constitution suggested by providing for a number of professional engineer members on the executive board of the Society of Engineers-in-Training as set forth in the following:

SUGGESTED OUTLINE OF A CONSTITUTION FOR THE NEW YORK STATE SOCIETY OF ENGINEERS-IN-TRAINING

ARTICLE I — NAME

This Society, sponsored by the New York State Society of Professional Engineers, shall be known as the New York State Society of Engineers-in-Training.

ARTICLE II — OBJECTIVES

The objectives of the Society shall be:

1. The promotion of the status of the Engineer-in-Training to that of Professional Engineer in accordance with the provisions of the laws of the State of New York.
2. The dissemination to both public and profession of information relevant to the Engineer-in-Training.
3. The establishment of Rules of Conduct for the Engineer-in-Training.
4. The protection of the designation Engineer-in-Training against improper use.
5. The development of a close association with the New York State Society of Professional Engineers and the furtherance of mutual aspirations.

ARTICLE III — MEMBERSHIP

Membership shall consist of persons who have received certificate as Engineers-in-examinations prescribed by the University of the State of New York for the right to practice professional engineering and have received certifications as Engineers-in-Training. Persons who have qualified as professional engineers shall be ineligible for membership and Engineers-in-Training who qualify as professional engineers shall automatically cease to be members; such persons automatically qualify for membership in the New York State Society of Professional Engineers.

ARTICLE IV — CHAPTERS

The Society, through its Board of Directors, may authorize one chapter in each county except that, where expedient, two or more counties, not separated geographically, may be organized as a single chapter; similarly a chapter comprising more than one county may, upon compliance with regulations established by the Executive Board of the Society, be separated into individual chapters.

The written petition of five (5) Engineers-in-Training, residing or employed within the chapter geographical limits above outlined, shall be sufficient to authorize a chapter.

ARTICLE V — DUES

The dues of the Society shall be Five Dollars per annum of which Two Dollars shall be retained by the chapter for the conduct of chapter affairs, Two Dollars shall be transmitted to the Society for the conduct of society affairs and One Dollar shall be forwarded by way of the State Society in payment of one year's subscription to The American Engineer.

Dues shall be payable in advance of the fiscal year. Persons in arrears of dues for more than one year shall, except in cases of action by the Executive Board of Directors, cease to be members.

ARTICLE VI — OFFICERS AND DIRECTORS

The Officers of the Society shall consist of a President, two Vice Presidents, a Secretary and a Treasurer. These Officers shall be elected annually by the membership and shall hold office until their successors have been installed.

The Directors shall consist of the following: Three members from the metropolitan area, as defined in the By-Laws, and three from other sections of the State, together with the President of each chapter.

The Directors, except Chapter Presidents, shall be elected for terms of two years with one half chosen annually (provision to be made for first directors.)

ARTICLE VII
NOMINATIONS AND ELECTIONS

At the first meeting of the Society, a Nominating Committee of five persons shall be chosen by those present. This Committee shall designate Officers and Directors for the period ending with the first annual meeting.

At the first meeting of the Society, subsequent to the first annual meeting, a Nominating Committee of five shall be elected from the membership. This Committee shall prepare a list of Officers and Directors for the year subsequent to the current one of the Society.

The recommendations of the Nominating Committee shall be submitted to the Secretary of the Society at least thirty days before the annual meeting and shall be printed on a letter ballot to be forwarded to each member of the Society. Nominations other than those of the Nominating Committee, if supported by signatures of thirty or more members and presented prior to the thirty day period above noted, shall also be printed on the official ballot.

ARTICLE VIII — THE EXECUTIVE BOARD

The governing body of the Society shall be known as the Executive Board and shall consist of the Officers and the Directors elected by the Society, together with a number of advisor Directors not in excess of one-third of the total voting strength of the Board to be designated by the New York State Society of Professional Engineers. Each member of the Executive Board shall be entitled to one vote. The President of the Society shall be the Chairman of the Board and the Secretary of the Society shall serve in a similar capacity for the Board.

The Executive Board shall have general supervision and direction on all matters pertaining to the Society and its finances. Its actions shall be subject to the approval of the general body except in emergencies as decided by a majority of the Society members of the Board.

ARTICLE IX — HEADQUARTERS

The Headquarters of the Society shall be located in such city or town of the State as may be designated by the Executive Board.

ARTICLE X — AMENDMENTS

This constitution may be amended by letter ballot provided that such amendment has been approved by the Executive Board in writing or has been submitted in the form of a petition signed by not less than 5% of the membership and provided further that such approval or submission shall have taken place at least thirty days prior to the next regular or special meeting. A two-third approval, with not less than 20% of the membership voting, shall be required to amend this constitution.

The Board of Directors of the National Society of Professional Engineers has given much thought to the problems of the Engineer-in-Training. In order to bring the matter to a head and begin the development of mechanisms through which work could be done at the state level there was adopted at the Board's meeting held in Columbus, Ohio on February 10 and 11, 1944 the following:

WHEREAS, the Board of Directors of the National Society of Professional Engineers, being in regular session assembled on this eleventh day of February, 1944 at Columbus, Ohio, has given careful and studied consideration to the matter of collective bargaining, and

Whereas, this Board recognizes the many problems involved and at the same time recognizes its responsibility to the engineering profession,

NOW THEREFORE, BE IT RESOLVED: That the National Society urges upon the various member State Societies the necessity for the early establishment of Societies within each State for engineers-in-training and,

BE IT FURTHER RESOLVED: That for the purpose of organization and membership an Engineer-in-Training shall be: (a) In States, territories and districts where laws defining and regulating the practice of Professional Engineering and where the designation Engineer-In-Training has been established legally — a person granted such status by a duly constituted agency for qualifying Professional Engineers. (b) In states, territories, and districts where laws defining and regulating the practice of engineering do not exist or where the designation Engineer-In-Training has not been given legal status — a person who has completed an Engineering course in a recognized institution of learning or who possesses the equivalent training and experience as determined by a Committee of Professional Engineers selected by a state Society whose membership is restricted to legally licensed or registered Professional Engineers. An Engineer-In-Training shall have expressed his intention of seeking qualification as a Professional Engineer before being admitted to membership in a Society of Engineers-In-Training.

The late and great teacher, Dr. Charles F. Scott, in his last published writing in The Registration Bulletin referred to the Engineer-in-Training movement as "an innovation of far-reaching significance". Among other things he said,

"*Engineers-in-Training* aims to vitalize the critical but neglected period, the experience period between graduation and registration. To the student in the engineering school, graduation has been the coveted goal of four years of study; his curriculum has been clearly defined; instructors have been expert guides; the whole environment subserves his progress. After graduation the young engineer must usually find his own way; objectives are vague; there are no specified curricula; environment may be depressing; he finds obstacles and must make detours; guide posts are few and human guides are largely accidental. But when he becomes an Engineer-in-Training, he acquires a new and definite goal—registration. His task is by self-development to qualify as a professional engineer. And as his own aims and efforts become more definite, others may be more ready to guide and aid. The experience period may awaken constructive interest as its significance is better recognized. Formal recognition is now accorded by Engineers-in-Training; it is a step in placing the experience period on a new basis."

New Constitution of the N.S.P.E.

Adopted December 1, 1944

PREAMBLE

The National Society of Professional Engineers, recognizing that service to Society, to State, and to Profession is the premise upon which individual opportunity must be builded does hereby dedicate itself, as an educational institution, to the promotion and protection of the Profession of engineering as a social and economic influence vital to the affairs of men and of the United States.

ARTICLE I—NAME

The name of this non-profit membership corporation is the National Society of Professional Engineers.

ARTICLE II—OBJECTS

Section 1. The objects of the Society shall be the advancement of the public welfare and the promotion of the professional, social and economic interests of the Professional Engineer.

ARTICLE III—MEMBER STATE SOCIETIES

Section 1. One organization, approved by the Board of Directors of the National Society, may be recognized in each state as a Member Society upon written acceptance of the provisions of this constitution. A minimum of twenty (20) Professional Engineers shall be required for the formation and chartering of a Member State Society. Societies affiliated with the National Society shall be limited to organizations in which at least 75% of the membership are Professional Engineers. Every Professional Engineer member of such State Society must be a member of the National Society.

Section 2. In all matters of State or local concern, the Member State Societies have full autonomy, but may call upon the National Society for advice, counsel and assistance. The National Society may recommend State Legislation and procedure in the interests of uniformity and efficiency, but action upon these recommendations shall be determined by the Member State Society.

ARTICLE IV—MEMBERSHIP

Section 1. Membership shall consist of Professional Engineers.

Section 2. A person, who is licensed to practice professional engineering in one or more of the branches thereof in accordance with the statutes of the state or possessions in which he permanently resides and practices and in which there exists a Member State Society, may obtain or retain membership in the National Society only by membership through such Member State Society. A Professional Engineer, residing in one state or possession and practicing in others where Member State Societies exist in all, may obtain or retain membership in the National Society only through membership in one of these member State Societies, provided that, if qualified, and he so desires, he may be a member of any number of Member State Societies. A Professional Engineer, residing or practicing in a state or possession wherein no Member State Society exists, may become a Member-at-Large.

Section 3. A person, who is not a Professional Engineer licensed to practice in any state or possession and who resides and practices in a state or possession wherein there has been no enactment licensing the practice of professional engineering and wherein a Member State Society exists, may obtain and retain membership in the National Society through that Member State Society only; provided such person has been certified by the Board of Directors of said Member State Society as being possessed of the qualifications generally required under Section 2 and provided further that after an enactment licensing professional engineering in such jurisdiction, the provisions of Section 2 only shall be operative.

Section 4. A member may be expelled from the National Society of Professional Engineers, for cause, as provided in the By-Laws.

ARTICLE V—DUES

Section 1. The amount of dues of the National Society shall be determined by the Board of Directors, as provided for in the By-Laws, and shall not exceed ten dollars ($10.00) per annum for members whose dues are collected by a Member State Society. Members at large shall pay the amount of dues provided in the By-Laws, which shall not exceed fifteen dollars ($15.00) per annum.

ARTICLE VI—ADMINISTRATION

Section 1. There shall be a Board of Directors, which shall consist of the elected officers of the National Society, the two immediate Past Presidents and the Directors from each Member State Society, who shall be named by the said State Society. Each elected Officer and Past President shall be entitled to one vote in the Board of Directors. Each Member State Society shall have one vote for the first five hundred, or fraction thereof, members in good standing and one additional vote for each additional five hundred, or fraction thereof members in good standing. State Societies may be represented by a Director or Directors, if duly appointed by the Member State Society they represent. No Member State Society may be represented by a Director or representative from any other State Society. Good standing shall be defined by the Board of Directors as provided for in the By-Laws.

Section 2. The Board of Directors shall determine all questions of policy and shall administer the affairs of the Society under this Constitution and the general provisions of the laws under which it is incorporated. The Board of Directors shall have such powers and duties as are prescribed by statute and by this Constitution.

Section 3. The Board of Directors shall direct the investment and care of funds of the Society and shall make appropriations for specific purposes.

Section 4. The Board of Directors shall prepare and adopt a series of By-Laws, which shall govern all procedures under this Constitution, including those of the Board and of the commit-

tees. Such By-Laws shall be adopted and may be amended by a concurring vote of not less than a majority of the votes of the Board present or voting at any meeting, provided that the text of the proposed By-Laws or Amendment shall be in the hands of each member of the Board at least ten (10) days before the meeting at which a vote on the proposed By-Law or amendment will be taken.

Section 5. There shall be an Executive Committee of the Board of Directors, consisting of the President, one Vice-President, to be selected by the Board of Directors, the Treasurer and three other members of the Board, chosen by the Board. The Board may authorize the Executive Committee to act for it within the provisions of this Constitution. All acts of the Executive Committee shall be subject to approval by the Board.

ARTICLE VII—OFFICERS

Section 1. The elected Officers of the Society shall be a President, four (4) Vice-Presidents and a Treasurer. There shall be an Executive Secretary, who shall be appointed annually by the Board of Directors. One Vice-President shall be chosen from each of the four major areas of the United States, as provided for in the By-Laws. The Officers shall take office on January 1st next, following their election, and shall hold office until the following January 1st, or until their successors have been duly elected and qualified.

Section 2. Nominations for elective officers, who shall serve for the following calendar year, shall be made by the Nominating Committee.

Section 3. The Nominating Committee shall also present at the annual meeting a list of nominees for the Nominating Committee to serve for the following year. This Nominating Committee shall consist of a Chairman and four members, who shall be elected from the floor at the annual meeting each year. No officer shall be eligible for membership on this Committee and the Committee shall not nominate one of its members for an office. The Nominating Committee shall secure the ratification of each candidate for an office from the Board of Directors of the Member State Society of which the nominee is a member. Additional nominations, which may include members of the Nominating Committee, shall be placed on the official ballot upon petition of fifty members, all of whom must be in good standing, provided such petition is received at least one week prior to the printing of the official ballot.

Section 4. Election of Officers shall be made annually by plurality vote on individual letter ballots sent to all members of the National Society in good standing.

Section 5. Should a vacancy occur in the office of the President, his unexpired term shall be filled by one of the Vice-Presidents, selected by the Board of Directors. Should a vacancy occur in the office of Vice-President, it shall be filled by the Board of Directors by selection from the membership within the area of the United States or its possessions in which the vacancy occurs. Should a vacancy occur in any other elective office of the Society, the vacancy for the unexpired terms shall also be filled by appointment by the Board of Directors.

Section 6. At the annual meeting in 1944, a Nominating Committee, consisting of five members, one of whom shall be designated as Chairman, shall be nominated and elected from the floor to serve one year. This Nominating Committee shall satisfy the provisions set forth in Sections 2 and 3, and after completing their assignment, this Section shall be dropped from the Constitution.

ARTICLE VIII—ANNUAL MEETING

Section 1. A general meeting of the National Society shall be held annually at such time and place as may be selected by the Board of Directors.

Section 2. Voting at the annual meeting of the National Society shall be limited to duly accredited representatives from each of the Member State Societies. The basis of voting representation for each Member State Society shall be on the basis of one vote for each 200, or fraction thereof, members in good standing. The election or appointment of voting delegates from a Member State Society shall be as determined by said Member State Society. Each voting delegate shall present to the Executive Secretary his credentials for inspection and approval before said delegate may be seated. Member State Societies, at their discretion, may authorize one or more of their members to cast all or part of the votes to which that Member State Society is entitled. Voting delegates, however, must be members of the respective Member State Societies for whom they are authorized to vote.

ARTICLE IX—HEADQUARTERS

Section 1. The Headquarters of the Society shall be located in Washington, D. C., or such other location as may be designated by the Board of Directors.

ARTICLE X—COMMITTEES

Section 1. Such committees as may be desirable shall be appointed by the President in accordance with the provisions set forth in the By-Laws.

ARTICLE XI—
ARTICLES OF INCORPORATION

Section 1. The delegates to the annual meeting may instruct the Board of Directors to make any changes in the Articles of Incorporation, in accordance with the law, which may appear desirable or which may be made necessary by any change or amendment to the Constitution of this Society.

ARTICLE XII—AMENDMENTS

Section 1. Amendments to this Constitution may be proposed by:

(a) A majority vote of the Board of Directors.

(b) Not less than two (2) Member State Societies.

(c) A petition signed by not less than 10% of the voting members in good standing, of the National Society.

Section 2. Proposed amendments shall be mailed by the Secretary to each member in good standing, together with a letter ballot, not less than thirty (30) days prior to the regular or special meeting of the Board, at which a regularly appointed Tellers' Committee has been instructed to report.

Section 3. An amendment shall become effective only upon receiving affirmative votes of two-thirds of the votes cast by members in good standing, provided that not less than 20% of the members, so entitled to vote, cast ballots.

(The New By-Laws of the N.S.P.E. will be published in our July issue)

MEMBER STATE SOCIETIES N.S.P.E — *Officers and Directors*

Member	President	Secretary	National Director
ARKANSAS	LEONARD N. WHITE 910 Rector Building Little Rock, Arkansas	E. L. WALES Arkansas Highway Dept. Little Rock, Arkansas	CHARLES S. CHRISTIAN 1620 W. 21st St. Little Rock, Arkansas
CONNECTICUT	LEWIS C. SMITH North Haven, Conn.	ROBERT A. CASTRO 183 Brewery Street New Haven, Conn.	JOHN W. SHALLENBERGER 886 Main St. Bridgeport, Conn.
DELAWARE	RUSSELL D. RODGERS 3115 Van Buren Street Wilmington, Del.	CARL C. STIMMEL R.D. No. 3 Wilmington, Del.	HARRY S. STANTON 2011 Monroe Street Wilmington, Del.
D. C.	FREDERICK W. HILL 6440 Barnaby St., N.W. Washington, D. C.	MAJ. ELMER C. KAUTT 1033 Patrick Henry Dr. Arlington, Va.	HERMAN F. LAME Westchester Apts. Washington, D. C.
GEORGIA	STEPHEN C. HALE 170 Boulevard, S. E. Atlanta, Georgia	RAY L. SWEIGERT Georgia School of Technology Atlanta, Georgia	ROY S. KING Georgia School of Technology Atlanta, Georgia
ILLINOIS	C. J. McLEAN 421-First St. Dixon, Ill.	H. E. BABBITT 204 Engineering Hall Urbana, Ill.	ALEX VAN PRAAG 447 Standard Office Bldg. Decatur, Ill.
INDIANA	M. W. CAMERON 3632 Guilford Ave. Indianapolis, Indiana	J. L. QUINN, JR., *Ex-Sec.* 1098 W. Michigan St. Indianapolis, Ind.	F. A. HENNING 5661 Guilford Ave. Indianapolis, Ind.
KANSAS	D. F. JOSLIN S.B.A. Hill R.R. No. 8 Topeka, Kansas	HAROLD H. MUNGER Kansas State College Box E Manhattan, Kansas	C. H. SCHOLER Kansas State College Manhattan, Kansas
KENTUCKY	JOSEPH C. HERMANN 642 Nelson Place Newport, Kentucky	C. S. CROUSE Univ. of Kentucky Lexington, Ky.	C. S. CROUSE Univ. of Kentucky Lexington, Ky.
MARYLAND	CHARLES A. MOHR 1716 Windemere Ave. Baltimore, Md.	ROBERT ANDREW NORRIS Springfield, State Hospital Sykesville, Md.	RUSSELL B. ALLEN 4610 Hartwick Rd. College Park, Md.
MASSACHUSETTS	WILLIAM F. RYAN Stone & Webster Co. 49 Federal Street Boston, Mass.	ALVIN S. MANCIB P.O. Box 53 West Somerville, Mass.	RAYMOND C. NEWTON Babson Park 57, Massachusetts
MINNESOTA	N. T. RYKKEN 5349 Beard Ave. So. Minneapolis 10, Minn.	RICHARD R. PRICE, Ex. Sec. 1010 Guardian Building Saint Paul 1, Minnesota	S. L. STOLTE 1437 Marshall Avenue Saint Paul 4, Minnesota
MISSOURI	BRUCE WILLIAMS P. O. Box 264 Joplin, Missouri	H. J. BRUEGGING P. O. Box 365 Jefferson City, Mo.	C. P. OWENS State Highway Dept. Jefferson City, Mo.
NEW JERSEY	STEPHEN G. SZABO 813 Lawrenceville Rd. Trenton, N. J.	FREDERICK D. BRAUN 16 North, Hillside Ave. Ventnor City, N. J.	HUGH C. CLARKE 97 Bentley Ave. Jersey City 4, N. J. C. GEORGE KRUEGER 85 Van Reypen St., Jersey City, N. J.
NEW YORK	CLARENCE W. POST 1941 Grand Central Terminal New York 17, N. Y.	ERNEST F. FOX 1941 Grand Cent. Term. New York, N. Y.	JAMES F. FAIRMAN 4 Irving Place New York 3, New York LELAND R. POST c/o N. Y. Tel. Co., Binghamton, N. Y.
OHIO	JOHN F. HALE 500 Municipal Bldg. Dayton, Ohio	LLOYD A. CHACEY, *Ex. Sec.* 63 South High Street Columbus, Ohio	J. S. KENNEDY 2945 Lee Road Shaker Heights, Ohio
OKLAHOMA	CLARENCE A. STOLDT 410 Commerce Exchange Bldg. Oklahoma City, Oklahoma	M. B. CUNNINGHAM 410 Commerce, Exchange Bldg. Okla. City, Okla	CHARLES S. LARKEY Box 521 Tulsa 2, Oklahoma
PENNSYLVANIA	SAMUEL BAKER 1616 Jefferson Avenue, Scranton 9, Pa.	RUSSELL S. CONRAD 29 S. 3rd St. Harrisburg, Pa.	J. J. PAINE 1430 N. Euclid Ave., Pittsburgh 6, Pa. SAMUEL BAKER 1616 Jefferson Ave. Scranton 9, Penna
PUERTO RICO	C. CALOR MOTA University of Puerto Rico Mayaguez, Puerto Rico	ANGEL SILVA, *Ex. Sec.* Dept. of the Interior Santurce, Puerto Rico	SALVADOR QUINONES 20 East Leland Street Chevy Chase, Maryland
RHODE ISLAND	FRANCIS W. CULLINAN 90 Pinehurst Avenue Providence, Rhode Island	VINCENT DiMASE 201 Dean Street Providence, Rhode Island	GEORGE J. GEISSER 151 Regent Avenue Providence, Rhode Island
TEXAS	ELGIN B. ROBERTSON P. O. Box 745 Dallas, Texas	R. S. GUINN 504 Ewell Nalle Bldg. Austin, Texas	T. J. KELLY Box 3190 Beaumont, Texas W. M. ANDREWS 904 Union Nat. Bk. Bldg. Houston, Texas
VIRGINIA	C. GRADY CATES 417 Arlington Rd. Roanoke, Va.	C. G. MASSIE 4030 Fort Drive Lynchburg, Va.	J. FRANCIS SETTE 4701 Connecticut Ave., N. W. Washington, D. C.
WASHINGTON	WALTER L. RICHARDSON 1430 — 11th Avenue W Seattle, Washington	MERLIN E. CUSTER 1331 3rd Ave. Bldg. Seattle, Wash.	JOSEPH E. WICKSTROM 761 Empire Building Seattle, Wash.
WEST VIRGINIA	CHARLES E. SNYDER 721 Mt. Vernon Avenue Fairmont, W. Va.	ROSS B. JOHNSTON, *Ex. Sec.* Kanawha Hotel Charleston, W. Va.	T. J. JACKSON 1203 Augusta St. Bluefield, West Virginia
WISCONSIN	WILLIAM J. URBAN 3001 West Canal St. Milwaukee 8, Wis.	O. J. MUEGGE 656 Crandall St. Madison 5, Wisconsin	L. E. PETERSON 312 E. Wisconsin Ave. Milwaukee, Wisconsin

Kindly report any errors or omissions to the Editor.

National and State Society News

President H. E. Nold, National Society of Professional Engineers, presented a very interesting paper entitled "What Licensing Has Done and Is Doing for Engineers as Professional Men" at the meeting of the Miami Valley Chapter of the American Institute of Chemists, held in Columbus, Ohio, on Friday, May 11th.

In summarizing his address, President Nold said:

"Let me summarize: Registration of engineers is, and can only be, justified as a measure to safeguard the public against the dangers of incompetent and dishonest practice of engineering. The development, passage and enforcement of the registration laws requires collective action and study by engineers, which leads to beneficial results to the profession and the professional man through higher technical proficiency, more ethical practice, better cooperation within the profession and between the professional man and his client or employer, better appreciation of the profession by the public, and the secondary result of better compensation for the professional man".

John D. Coleman, President of the Dayton Society of Professional Engineers also presented a paper on "What Licensing Could Do For The Chemist". The fact that these two members of the National Society of Professional Engineers were invited to appear before the members of the Miami Valley Chapter of the American Institute of Chemists on the same date, is particularly gratifying.

MARYLAND

At a recent meeting of the Maryland Society of Professional Engineers, the following officers were elected:

President, Charles A. Mohr, 1716 Windemere Avenue, Baltimore, Maryland; 1st Vice-President, Earl A. Malan, Knickerbocker Building, Baltimore, Maryland; 2nd Vice-President, James O. B. Coulling, 9 W. Chase Street, Baltimore, Maryland; Secretary-Treasurer, Robert A. Norris, Springfield State Hospital, Sykesville, Maryland; National Director (with 2 years of term to serve), Russell B. Allen, 4610 Hartwick Road, College Park, Maryland; and State Director (with 2 years of term to serve), Van Rensselaer P. Saxe, 100 West Monument Street, Baltimore, Maryland.

MINNESOTA

MINNESOTA AMENDS REGISTRATION ACT

Direct from Headquarters of the Minnesota Association of Professional Engineers in the Guardian Building, St. Paul, comes the following release and photograph. This is the best presented submission the American Engineer has yet received. Its form should be made universal by N.S.P.E. and its associated Societies.

Raising of standards of professional requirements in the Minnesota State Registration Law for architects, engineers and land surveyors has been effected by amendments proposed by the Minnesota Association of Professional Engineers and signed by Governor Edward J. Thye at the recent legislative sessions just closed in St. Paul.

The Law now requires eight instead of five years' preparation in training and experience prior to application for a license. A minimum of three years' experience is required.

Provision has been made for architect or engineer in-training status of persons graduated from an accredited school or college of architecture or engineering, or for those who have had four or more years of experience, qualifying them to take the examination in theory. The provision will give them the benefit of legal status during the intervening period leading to full professional practice.

The Law now provides credit to veterans for appropriate technical training or education received in the armed forces.

All single and two-family dwellings are exempted from the Act, along with all farm buildings and accessories

Governor Edward J. Thye signs a bill providing amendments to the Minnesota State Registration Law for Architects, Engineers and Land Surveyors. The amendments were proposed by the Minnesota Association of Professional Engineers. Watching the Governor sign are Harold Chard, State chairman of the Association's legislative committee; Senator A. O. Sletvold of Minnesota's 63rd District; D. R. McEnary, President of the State Registration Board and President of the Minnesota section of the American Institute of Architects; Vernon S. Welch, State representative from the 34th district; N. T. Rykken, State president of the Association and W. McG. Beadie, President of the Association's 4th district.

thereto, and all other private construction work, cost of which does not exceed $10,000.

The amendments provide for a definition of architecture and professional engineering. Formerly this has been only a part of the rules and regulations of the Registration Board and not a part of the Law, thus making it of questionable constitutionality until now.

Passage of this Act is the result of years of hard work and education on the part of the Minnesota Association of Professional Engineers. Amendments presented at two previous sessions of the Minnesota State Legislature failed to pass. This past year the Association's district societies have carried on a broad educational program within their territories, meeting with their State senators and legislators to explain the importance of raising the standards of the profession for the greater protection of public health and welfare.

STATE REGISTRATION LAW AMENDMENTS PASSED

The amendments to the State Registration Law proposed by the Minnesota Association of Professional Engineers were passed at the recent session of the Legislature and signed by Governor Edward J. Thye. The bill passed the Senate unanimously and the House by two votes. Harold Chard, chairman of the State Legislative Committee, reports that opposition by the rural vote and the Farm Bloc appeared to be political, due to other controversial bills under consideration. It is apparent that we still need to educate many of the legislators in the various phases of our profession as they affect public health, safety and welfare. Every effort should be made to invite them to district meetings at appropriate times and to appraize them of our activities so that when the next occasion arises they will be able to act intelligently and with conviction.

FLY THE FLAG!

Some Minnesota Association of Professional Engineers members are evidently not aware that both our Association and N.S.P.E. have passed resolutions recommending the use of the title "Professional Engineer" by all those who are legally entitled to that designation. Since all members of M.A.P.E. are registered engineers, they are authorized to display this title on their letterheads and after their signatures. It is expedient and desirable to make a habit of affixing to one's signature on business letters the significant words "Professional Engineer". A man thus makes a contribution to the prestige of his vocation and also indicates his own standing. The engineer marches under a noble banner; let him keep the flag flying.!

NEW YORK

ANNUAL MEETING

With representation outside the metropolitan area restricted to Chapter delegates, the New York State Society of Professional Engineers held its annual meeting in New York on May 4th and 5th.

Among the more important decisions of the meeting were the election of officers, directors and members of the Nominating Committee, the approval by the membership of an amendment to the constitution providing for an increase in dues and the adoption by the Board of Directors of a Schedule of Fees and Salaries. This latter proposal must now be submitted for membership action.

Reports from officers and chairmen of a dozen committees concerned with the internal affairs of the Society were presented. That dealing with the representation of engineers in economic matters provoked considerable discussion.

The luncheon session of Saturday, May 5th, was addressed by Bertram D. Tallamy, Deputy Superintendent of Public Works of the State of New York who discussed the New York State Program for Post-War Arterial Highways and the Hon. Newbold Morris, President of the Council of the City of New York, whose topic was the Role of the Engineer in Post-War Public Work.

The officers, directors and members of the Nominating Committee chosen for the current year are: President, Joseph A. Brady (Westchester County); 1st Vice-President, Charles W. Burke (Kings County); 2nd Vice-President, William H. Larkin (Richmond County); Financial Secretary, Ernest F. Fox (Bronx County); Treasurer, Patrick M. Corry (Bronx County); Directors at Large; Zone No. 7, Robert A. Sovik (Onondaga County), Zone No. 8, Lacey Ketchum (Steuben County), Zone No. 9, Walter J. O'Brien (Chatauqua-Catt.); Nominating Committee—1946; James F. Fairman (Kings County), George F. Nicastro (New York County); William W. Perry (Broome Area), William F. Kavanaugh (Onondaga County), Michael D. McDonald (Erie County).

Bronx Chapter

The first of a series of lectures by the Chapter's new president, Charles F. Giraud on current topics of special interest to the engineer as well as to the community at large, was given at the regular May meeting of the Bronx County Chapter.

The new zoning ordinance recently enacted by the City of New York was the subject of the lecture and the discussion which followed. Guest speaker was Mr. W. Del Gaudio, Consulting Architect, who has been identified with various prominent housing projects. Mr. Del Gaudio is Past President of the New York Society of Architects and of the New York State Society of Architects.

In his address, he reviewed the many intricate aspects of the zoning resolution as amended, and showed complete mastery of the subject.

Erie Chapter

The new officers and directors of the Erie Chapter for 1945-46 are: President, Gust. H. Karlsteen; Vice-President, Eugene A. Eldridge; Secretary, John W. Johnson; Treasurer, Arthur B. Weaver; Director: (for 3 years) C. Arnold Dutton, Park W. Judah; Hold over Directors: Edward G. Coon, Carlos E. Harrington, G. M. Magrum, Cameron A. Ross.

These men were inducted in the presence of some 225 members and guests. Among the latter were Dr. N. R. Gibson, Vice President of the Buffalo, Niagara and Eastern Power Corporation, member of the New York State Licensing Board and Dr. Ivor Griffith, who spoke on "Highlights of Some Human Habits".

The Directors dinner meeting, preceding the regular meeting, was attended by: Dr. Ivor Griffith, Dr. N. R. Gibson, W E. S. Dyer, John J. Landers, Gust. H. Karlsteen, Eugene A. Eldridge, John W. Johnson, Arthur B. Weaver, C. Arnold Dutton, Park W. Judah, Paul Fitzer, Michael D. McDonald, Edward J. Nunan and Norman S. Snyder.

Oneida Mohawk-Valley Chapter

During the latter part of last year and the early part of this year, work has been going on to reorganize the Oneida County and Mohawk Valley Chapter of the New York State Society of Professional Engineers. The serious thinking and consistent effort behind this reorganization is of value and interest to all local chapters.

In a meeting in December, designated as a reorganization meeting, the officers for 1945 were elected and the policies for the future and the activities to be undertaken were carefully planned. Further work was carried on at a short business meeting on January 8th, and in February, the real work of the Chapter commenced, when Arthur J. Foley, Attorney-at-Law, explained to the Chapter how interest was maintained in the Bar Association.

At the March meeting, Robert C. Wheeler, Consultant Engineer of Albany and Chairman of the Legislative Committee of the State Society explained the status of legislation affecting the engineering profession in New York State and called attention to what the Society could do in connection therewith. At the May 14 meeting, the report of Chapter Delegate to the annual meeting of the New York State Society of Professional Engineers held on May 4 and 5 was presented by Joseph B. Shaw.

William Hale, M.D., Vice-Speaker of the House of Delegates, Medical Society of the State of New York, explained the functioning of the medical society and the cooperative work which had been done by physicians and engineers.

It will be noted that the keynote of each of these three meetings helped carry out an integrated plan to give the Chapter a glimpse of what the other professions are doing in their own fields, and from them to show how closer cooperation between the medical and legal professions and the engineering profession may develop.

Queens Chapter

A reference to the minutes of the April 26th meeting of the Queens County Chapter reveals that the question of increased State Society dues was a main point of discussion. Other items of consideration were: the question of a civil service examination for Supervisor of Electrical Power and Structures; collective bargaining in Canada and a proposed schedule of fees and salaries.

Westchester County Chapter

From the minutes of the April meeting one learns:

Chapter President James Harding expressed appreciation for the support he has received during the past year and for his re-election. The membership committee reported that the Chapter has 136 members, including 36 new names. It was determined at the meeting that each member shall be supplied with a copy of the Chapter roster. In this connection it is pointed out that this will aid members to learn who their fellow-members are and will enable those who live in the same community to contact each other, particularly in order that transportation to the meetings may be shared. As a starter in this direction Engineer Traub of Yonkers has offered to supply transportation for those in his vicinity.

The President gave an informal talk on the County Air Port at Rye Lake. This is a $3,600,000 project, made possible through the cooperation of the Civil Aeronautics Authority and the Army Engineers. With its three 5000 foot runways, it will be a very important air field with possibilities of future growth. It will offer services to distant points and serve as a center for chartered and private planes, and as a flying school. The field will have a capacity of 500 planes and will be a source of revenue to the county.

At the conclusion of the meeting, the Chapter, not to be outdone by others, and in line with recent trends, made Jim a Doctor of Engineering by awarding him the degree of Doctor of "Hot Aeronautics" properly embellished (including ribbons).

OHIO

The following letter, which is self-explanatory, was received by Dr. Sheridan, in connection with statements appearing in Mr. Charles W. Crouch's article entitled "The Status of the N.S.P.E." which shows conclusively that Mr. Crouch is a thorough sportsman as well as a forceful writer:

134 West Dixon Avenue,
Oakwood, Dayton 9, Ohio

May 5, 1945.

Mr. Arthur V. Sheridan, Editor,
The American Engineer,
415 Lexington Avenue,
New York City, New York.

Dear Mr. Sheridan:

In the article entitled "The Status of N.S.P.E.", published in the March issue of "The American Engineer", the writer made statements regarding the attitude of Mr. C. A. Powel, past president of the A.I.E.E. toward the N.S.P.E. More recently information has been received to the effect that Mr. Powel is now in accord with the purpose of the N.S.P.E., and an active supporter of this organization.

It is very gratifying to have received this information. The professional status of engineering is definitely promoted by the endorsement of well known Engineers in Industry and the leaders of the various Technical Engineering Societies. Mr. Powel is unquestionably in both of these categories.

The writer trusts that no statements made in the above mentioned article have been construed by Mr. Powel as personal criticism in any way. There was no such thought or intention on the part of the writer.

Your acceptance and publication of my recent article is very greatly appreciated. The real democratic spirit of the N.S.P.E. is demonstrated when the offerings of an ordinary member

of the profession are thus encouraged.

Please accept my hearty congratulations on your most timely and inspiring editorial appearing in the April issue of "The American Engineer". Let us hope that it is read and thoroughly considered by a great many non professional as well as Professional Engineers.

Very truly yours,

Charles W. Crouch

Dayton Chapter, O.S.P.E.

In the May issue of the Ohio Engineer, there appears a letter signed by the president, John F. Hale, which could well be used by other Chapters by merely substituting their own name wherever the name of the Ohio Society appears. It is reprinted exactly as published, to be used as a guide by any other societies wishing to do so:

"Fellow Engineers—

WHAT ARE YOU DOING to make your local chapter and the Ohio Society bigger and better?

What you do for your Chapter determines what your chapter does and what your chapter does — along with the other twenty-six chapters determines what the Ohio Society does.

It takes a lot of work to keep the chapter moving. The President has the main responsibility. Then the Vice-President, the Secretary and the other officers — each one has a job to do. Then each committee has a definite task of programs — publicity — violations— membership — and all the rest.

SURE — THERE'S A JOB FOR YOU. If your President hasn't asked you to serve in some capacity, let me suggest that you go to him and tell him you'd like a job. He'll have one for you and will thank you for your willingness to help.

With your help, you will have an active chapter. An active chapter will help build a strong Ohio Society and a strong Ohio Society will help towards the ultimate goal — a larger and stronger National Society of Professional Engineers.

Sincerely yours,

JOHN F. HALE"

OKLAHOMA

Among the matters discussed at the May Meeting of the Oklahoma Society of Professional Engineers, were two bills passed by the Oklahoma Legislature which were considered of vital interest to the Registered Engineers in the State of Oklahoma.

House Bill Number 77 provides for the creation, powers, and duties of State Board of Health, authorizing the appointment of a State Commissioner of Health, and selection of nine members, one from each Congressional District of the State. This Bill provides for at least a majority of such members "shall be duly licensed as physicians and surgeons by the State Board of Medical Examiners and members of the Oklahoma State Medical Association". It was the consensus of opinion of the Directors and Membership of the Oklahoma Society of Professional Engineers that the Board should be represented by sanitary Engineers in addition to members of the Medical Association. This provides that the Governor appoint three members, and a resolution was adopted at this meeting respectfully requesting the Governor to appoint Registered Professional Engineers to this Board of Health.

The position taken by the Directors is that while the Doctors and Medical Profession are primarily interested in health, the Engineer has as important a role in the safeguard of public health as does the Doctor. The Doctor detects the cause of an epidemic and treats the individual afflicted, while the Engineer makes the necessary corrections, writes the specifications, draws the plans, and supervises the construction of the projects and services necessary to the safeguard of the health of the entire community — the Public.

Senate Bill Number 21 was also given consideration. This Bill provides for the appointment of State Board of Regents for the Agricultural and Mechanical colleges in the State. Section 2 of this Bill provides for appointment of nine members, one of whom to be the President of the State Board of Agriculture, and eight members to be appointed by the Governor, one from each Congressional District of the State of Oklahoma, "majority of said members so appointed by the Governor shall be farmers, who are actually engaged in farming and/or livestock growing as their principal busines or occupation in earning a livelihood." The Board of Directors passed a resolution, respectfully urging the Governor to give consideration to the appointment of an Engineer to the Board.

Past statistics show that in normal times there are more students enrolled in Engineering at the A. & M. College at Stillwater, Oklahoma, than in Agriculture or other Departments. The aforesaid Engineering School is one of the principal engineering schools within the State, and one in which those engaged in the Engineering profession, as well as the general public in Oklahoma, have taken pride for many years. Consequently, the Oklahoma Society of Professional Engineers naturally feel that they have as much interest in this School as do the farmers of the State.

Both of these resolutions were passed unanimously by the Board of Directors, and transmitted to the Governor for his consideration.

PENNSYLVANIA

THE PROFESSIONAL ENGINEER IN SOUTH AMERICA

Apropos of Mr. William A. Leech's fine talk on South America at the February meeting, a member of the Pittsburgh Chapter with several year's residence in Latin American countries observes that, whatever the relative merits of the educational and training system of that fascinating continent, as compared with ours, they certainly have advanced beyond us in working out certain problems as affects the standing of engineers in their social structure.

Down there, a physician is called a Medico, meaning a man who deals with medicine or surgery, a dentist is called a Dentista, a lawyer an Abogado, meaning advocate. But an engineer, architect, or chemist, doing work that would correspond to that performed by our consulting engineers, is referred to as Doctor, whether he wants it or not. This is especially true in Brazil.

Just how this originated would be hard to say, but it gives us something to ponder over. When they dedicate their projects or structures, the engineers are on the platform, and the fact is not lost sight of that it is an engineering accomplishment. Truly a contrast to what happens here.

Such results are not attained by accident. Perhaps their methods are based on such different conditions that they could not be applied here, but is it not possible that we are following the wrong trail when we base our activities on what lawyers and physicians have done?

The May Bulletin of the Pennsylvania Society of Professional Engineers contains an interesting report by the Legislative Committee on the proposed new Engineers and Surveyors Registration Law, Senate Bill 618, of that State. It says:

"Because of changes in similar Acts of other States, the decision of our Dauphin County Courts and the decision of the Illinois Supreme Court which declared the Illinois Act illegal, the need for a modern Engineering Registration Law has become more pronounced since 1927, the date of our last Act.

The Illinois Act contained many provisions similar to our Act. In order to meet the objections of the Illinois Supreme Court which held its Act vague and indefinite, a new definition has been submitted which broadens the scope of the Act and permits the licensing of the newer fields of Engineering which are combinations of the main Engineering branches such as Civil, Mechanical, Electrical and Mining Engineering. This meets the criticism of the Dauphin County Court in the Cronheim case.

The modern trend of all professions has been the granting of licenses after the successful passing of an examination. This is a fairer method as it practically eliminates the personal equation. Provisions are made for the applicant to take the examination in that branch of Engineering for which he is best qualified.

The innovation in this Act is that of "Engineer-in-Training". This provision is made so that an applicant can take his examination in fundamental engineering principles when he is best fitted to do so. This is equivalent to the preliminary examination in Law or Medicine. Following the practice of the Legal and Medical professions, if an applicant is a graduate of an approved Engineering institution, he is granted a Certificate of Engineer-in-Training without taking such an examination. Thereafter, all he needs to pass, after he has had the required years of experience, is an examination on Engineering practice. Applicants who are not graduates can take these examinations separately or at the same time.

The years of experience of a graduate have been increased to four. This is to meet a similar requirement of all other states and makes possible reciprocity on an equal basis.

The Board if given the power to license engineers without examination where such engineers are licensed in other states, provided such states likewise license engineers registered in Pennsylvania. The Board also has the power to grant a license without an examination to those applicants who have a Certificate of Qualification from the National Council of State Boards of Engineering Examiners which is an organization composed of only Engineering Registration Boards of all forty-six states having licensing laws.

Any applicant has a right to appeal to the Dauphin County Courts and from there to our Superior Court.

The Act would become effective on June 30, 1946, thus giving an opportunity to all of those who desire to make application before that date in order to avoid the necessity of taking an examination.

The Act also provides for the practice of Engineering by firms or Corporations. In the past, this has been a source of irritation. There are quite a number of such organizations, which are capable and necessary to handle large engineering projects and which have been in existence for many years. The provisions, to wit, Section 6, is well prepared and protects the profession and the Commonwealth where such organizations practice engineering.

While the Model Law had been prepared by a number of Engineering organizations and while the Act in part follows the Model Law, yet the Act has been prepared to more nearly conform with the licensing laws of the other major professions of this Com-

Northeast Chapter

The members of Northeast Chapter are elated that the new Registration Act has been finally passed and signed by the Governor and in the May issue of Northeast News to extend congratulations to Engineers Hemphill, Baker, Fuller, Lawrie, Snyder, Weimer and Rahn for their excellent work in keeping the bill moving to final enactment. We are also grateful to Governor Martin and to Mr. George I. Bloom, Sec'y to the Governor, for the valuable assistance and to Representative McAtee for his fine work on the floor in behalf of the bill.

At the meeting of the State Executive Board on April 21st, the Constitution and By-Laws of Northeast Chapter, with only minor changes, were approved.

George H. Wilson, Chairman of the Outing Committee, will ask the Chapter to approve August 11th at Gaycroft Grounds, La Plume as the date and place for the outing. Food and transportation being what they are, George has a job on his hands—but he will do it.

John M. Rice, Consulting Engineer of Pittsburgh, Pa., has been appointed a member of the Board for Registration of Professional Engineers in Pennsylvania

WEST VIRGINIA

The Northern Panhandle Chapter of the West Virginia Society of Professional Engineers adopted a resolution on the recent death of the Society's Second Vice-President, John R. Seckman, as follows: "The Northern Panhandle Chapter of the West Virginia Society of Professional Engineers wishes to record an expression of its feeling of profound sorrow upon hearing of the death of John R. Seckman, Second Vice-President of the Society, on April 14. During his connection with the Society, Mr. Seckman was unswervingly devoted to its interests.

The Northern Panhandle Chapter, in recording this evidence of its appreciation of the personal qualities and service of Mr. Seckman, desires also to extend to his family its sympathy in the loss which they have sustained.

Copies of this Resolution shall be spread upon the minutes of the Chapter, sent to the family, The West Virginia Engineer and The American Engineer."

WISCONSIN

BOARD RESOLUTIONS

Two resolutions, reproduced hereafter, have recently been adopted by the Board of Direction. Members are urged to study these resolutions and to follow them in their dealings with the public. The Board deems them essential from the standpoint of proper professional relations.

Competitive Bidding

WHEREAS, the Board of Direction of the Wisconsin Society of Professional Engineers has had information brought to its attention that on occasions public authorities ask engineers to submit in competition their terms for preparing plans for engineering projects, frequently requesting that such tenders be accompanied by an estimate of the cost of the project proposed, and in some cases requiring the posting of a performance bond; and

WHEREAS, such procedure in promoting competition is contrary to recognized practice in engaging professional services, inconsistent with professional ethics, tends to eliminate highly qualified engineeers, and hence is not in the public interest,

THEREFORE, BE IT RESOLVED, that the Board of Direction of the Wisconsin Society of Professional Engineers:

(1) Emphatically records its disapproval of such procedure;

(2) Recommends that public authorities and others desiring to secure professional engineering services, select an engineer from those available, on the basis of his qualifications, experience, and professional reputation for work of the character under consideration.

SERVICE OF ENGINEERS ON COMMITTEES

WHERAS the Wisconsin Society of Professional Engineers has been organized for the purpose of promoting the welfare of the public and the engineering profession, it is recognized that the engineer should contribute to the public interest without pecuniary compensation. As a patriotic and public-spirited citizen, the engineer may properly serve on public commissions, committees, and civic organizations where his specialized knowledge and experience enable him to render services of great public value for which no monetary consideration is provided or expected.

As a general rule, gratuitous professional service may properly be limited to information, advice, and assistance of a general nature relative to the inception, principles involved, and the proper procedure to be followed in the development of contemplated public projects. On the other hand, only the formally retained and compensated engineer should serve in preparing alternative estimates, specific recommendations, plans, details, specifications, and estimates for definite projects involving professional investigations and studies.

It should be evident that if engineers are to serve their clients properly, they cannot ordinarily devote the time necessary to search out all the facts and study the technological phases of an engineering project gratuitously with sufficient thoroughness to permit them to render correct opinions. Engineers not formally retained for advice on the specific problem should therefore limit their activities to advising as to procedure which should be followed. The engineer thus renders a public service by guiding the officials in channels which lead to a thorough analysis.

THEREFORE, BE IT RESOLVED that the Wisconsin Society of Professional Engineers should be helpful in assuring that proper procedure is followed in connection with engineering projects handled by public agencies and supported by taxation; that the Society should not be formally represented on committees to advise on the technological phases of a professional problem; and that individuals should be suitably compensated for technical advice.

RHODE ISLAND

At the April meeting of the Rhode Island Society of Professional Engineers, Mr. R. H. Poterfield, Resident Field Engineer for Allis Chalmers Mfg. Co., and a member of the A.S.E.E., Providence Engineering Society, showed some very interesting sound motion pictures explaining (1) Magic of Steam, (2) Tornado in a Box. Following the pictures there was a question and answer period.

The regular business meeting followed immediately.

President Cullinan outlined a very energetic program for the rest of the year, with emphasis on bringing new members into the Society.

A great executive is a person who never does anything he can have done by anybody else, but who, nevertheless, always keeps busy — not necessarily with his hands and feet, but with his thoughts.

* * *

Men who are longest remembered and whose memories are most highly revered after they are dead are not those who have made the most money but those whose hearts were gentle and open, whose sympathies were broad and ready, and who best served their fellow men.

* * *

A wise man does not need advice — and a fool won't take it.

* * *

Things don't "just happen" in this world, they are "brought about".

* * *

Many a man has made a needless failure, because, for purposes of immediate gain, he has let himself lose the reputation of dealing fairly and squarely with others.

* * *

A fellow with his eyes always on the ground often bumps his head, and one with his nose in the air frequently stubs his toe.

* * *

Briefs of Interesting Articles

VERSATILITY MARKS WORK OF PERSIAN GULF COMMAND

The May issue of Civil Engineering contains an interesting article entitled "Versatility Marks Work of Persian Gulf Command by Lieutenant Colonel E. B. Myott, U. S. Army, Commanding Engineer General Service Regiment. In an address before the New Orleans section of the A.S.C.E. Lt. Col. Myott stated — "I will always remember Iran as an absolutely barren country of excruciating heat . . . But, most vividly of all, will I always remember the matchless, unconquerable, grim determination of the technically trained American Soldier in Persia . . . and how his unstoppable effort perhaps meant life itself to our great ally, the U. S. S. R."

In his article, Lt. Col. Myott describes the great difficulties encountered by the Army engineers in making possible the movement of cargo by both rail and motor transportation across the corridor to points in Northern Iran in the Caspian Sea area for a distance comparable roughly to that from New Orleans to Southern Illinois. Adequate port facilities had to be constructed, camps for personnel at the ports had to be built and railroads had to be maintained in the most efficient operating conditions possible. At the time the Army took over the operation of the railroad, most of the rolling stock was in very poor condition and many locomotives and cars had to be shipped from the States to supplement and augment the existing equipment. The heat under which the engineers worked often reached 140 degrees Fahrenheit in the shade and at night the temperature very often failed to go below 90 degrees Fahrenheit.

The motor transport route, extending 650 miles, also offered major operating difficulties. There were two mountain passes at an elevation of about 8500 feet above sea level and many hills with a maximum gradient of 12%. The operation of motor trucks over this route involved many problems, ranging from extreme heat and dust storms in the desert to deep snow drifts at temperatures of 10 to 14 F below zero over the mountain passes. Many land slides blocked the highway through the mountain gorges during periods of intense rainfall in the spring. Miles of telephone line, many radio installations also had to be put into operation and altogether, Lt. Col. Myott's article gives an interesting account of the many difficulties encountered and successfully overcome.

GUAM SUPERHIGHWAY BUILT IN SIXTY DAYS

From a narrow, muddy, bull-cart trail to a four-lane superhighway in 60 days would be an accomplishment even under normal circumstances. It is especially remarkable under combat conditions on a recaptured island in the Pacific. Captain Hiltabidle Jr. CEC, U.S.N., who was the officer-in-charge of the Seabee battalions on this road-building job describes the difficulties encountered, the work done, and more than that, the spirit which worked this construction miracle in an article in the May issue of Civil Engineering.

The article is illustrated with many photographs which show clearly, a few of the difficulties which had to be overcome. Interesting statistics are given as to road contours, curves, etc., and the climatic conditions under which the Seabees worked.

NEW ROLE OF AERIAL PHOTOGRAPHY

Wilbur H. Simonson, Public Roads Administration, Washington, D. C. is the author of an article appearing in Civil Engineering for May, describing the new role of aerial photography in combination with ground surveying and mapping methods in highway construction. Before the war, the lack of accurate aerial photographs at scales larger than 500 feet to the inch limited the use of aerial photographic methods to general area maps and general-purpose photographs. Wartime experience, by making possible accurate contour mapping of larger scale, has marked a turning point in aerial photographic surveying, making it useful and economical in the design stages of highway and related work.

The question then arises — "How can we use the various map scales to the best advantage in such work?" Mr. Simonson answers this question and discusses the combination of aerial and ground surveys in a complete operation in this article, which is a reprint of a paper he presented before the "Surveying and Mapping Division" at the A. S. C. E. annual meeting in New York.

OVERALL PLAN FOR GRAND VERDIGRAS RIVERS

W. C. Burnham, Hydraulic Engineer, Southwestern Power Administration, U. S. Department of the Interior, Tulsa, Oklahoma, is the author of an article in the May issue of Civil Engineering, describing steps taken to control the 20,810 square mile area drained by the Grand and Verdigris Rivers above their junction with the Arkansas River at Muskogee, Oklahoma.

To date, considerable planning has gone forward to create a number of multiple purpose projects on these two river systems. Nine reservoirs are at present considered essential to the plan. One dam, mile-long Pensacola, was completed in 1940. A second, Fort Gibson, has been started, but work has been suspended during the war. Plans and surveys are complete for a third structure at Markham Ferry Dam Site.

The article, which is illustrated with a map of the drainage basis of the Grand and Verdigris Rivers, gives considerable factual information and points out how the construction of these multiple purpose projects will materially assist the development of the region.

THE NEXT TWENTY-FIVE YEARS IN AVIATION

Under this title, C. C. Furnas, Director of Research, Airplane Division, Curtiss-Wright Corporation, Buffalo, N. Y., published the article in the May issue of Mechanical Engineering, which points out the literally hundreds of significant improvements that have been made in the construction and functioning of the component parts of the airplane during the period of the present war.

Mr. Furnas predicts that very soon after the war is over, these changes will begin to make themselves evident in greatly improved, and as compared to pre-war years, greatly enlarged activities in commercial and private aviation. He points out the three major questions that the average person would like to have answered for the commercial airplane of the future: 1—How big? 2—How fast? and 3—How many?

As factors of improvement, he cites reliability, safety, comfort, cost and appearance. The possibility for the use of the gas turbine or jet propulsion for the post war airplanes is predicted, and the significances of the development of the helicopter is fully recognized.

SOME ASPECTS OF SHIPBUILDING DURING WORLD WAR II

In the May issue of Mechanical Engineering is an abridged reprint of a paper delivered by James R. Moore, Vice-President, Moore Dry Dock Company, Oakland, California, before the meeting of the San Francisco section of the A.S.M.E.

Mr. Moore draws attention to the fact that great things have happened in the ship-building during recent years, particularly on the West Coast where space for expansion has been virtually unlimited, the modern technics of ship-building have reached their full flowering. Some of the factors which have been responsible for the greatly increased productivity of ship-yards today over former years include: 1. The introduction of welding to ship-building; 2. The extensive use of flame-cutting in shipbuilding; 3. The subassembly and preassembly of the major parts of the ship before erection onto the hull itself; 4. The liberal use of very large-capacity cranes for handling the afore-mentioned preassemblies; and 5. The application of the technics of multiple construction to the shipbuilding industry, and painstakingly careful scheduling and sequencing of construction.

Mr. Moore's article is illustrated with photographs.

RECENT DEVELOPMENT IN ENGINEERING MATERIALS

An article by Archibald Black, Manager, Mechanical Engineering Department, Simmonds Accessories, Inc., New York, dealing with glasses, woods and glues and miscellaneous materials and processes, appeared in the May issue of Mechanical Engineering.

In the section concerning glasses, Mr. Black deals with glass-fiber applications, special plate glasses, industrial glasses, optical glasses, glass gauges and glass bearing jewels.

The development of water-resistant and water-proof glues for woods, papers, fabrics and other non-metallic materials has branched out to include such a wide field of adhesives that it now covers an extended list of synthetics of the type usually termed "plastics". Among these glues are casein, hot-press phenol-form aldehyde resin, intermediate-temperature phenolic, room-temperature phenolic, melamine formaldehyde and urea-formaldehyde resin. All of the above are suitable for the gluing of woods and can be adapted for papers and fabrics. Mr. Black also describes the glues for metals, the chemical treatment of wood, wood and paper impregnation and the development of impregnated wood bearings.

Among the miscellaneous materials and processes referred to in the article are abrasives, powder metallurgy and sintering, luminescent materials, black finishes, electroplating of nonconductive materials, electropolishing, the applications of supersonic vibrations, machinability studies, refractory materials, corronizing, etc.

The article contains very complete bibliography in connection with each subject treated.

A MESSAGE TO EACH ENGINEER FROM THE CHAIRMAN OF E. C. P. D.

The address delivered by Everett S. Lee, Chairman of the Engineers' Council for Professional Development at the March meeting of the council is reprinted in the May issue of Mechanical Engineering.

Mr. Lee's address referred to the reports of various committees and drew attention to the report of Dr. Jackson, who reported for the Committee on Principles of Engineering Ethics, in which he stated that the work of writing a Canon is progressing. Mr. Lee also repeated the "Faith of the Engineer" which is reprinted herewith:

Faith Of The Engineer

I am an Engineer. In my profession I take deep pride, but without vainglory; to it I owe solemn obligations that I am eager to fulfill.

As an Engineer, I will participate in none but honest enterprise. To him that has engaged my services, as employer or client, I will give the utmost of performance and fidelity.

When needed, my skill and knowledge shall be given without reservation for the public good. From special capacity springs the obligation to use it well in the service of humanity; and I accept the challenge that this implies.

Jealous of the high repute of my calling, I will strive to protect the interests and the good name of any engineer that I know to be deserving, but I will not shrink, should duty dictate, from disclosing the truth regarding anyone that, by unscrupulous act, has shown himself unworthy of the profession.

Since the Age of Stone, human progress has been conditioned by the genius of my professional forebears. By them have been rendered usable to mankind Nature's vast resources of material and energy. By them have been vitalized and turned to practical account the principles of science and the revelations of technology. Except for this heritage of accumulated experience, my efforts would be feeble. I dedicate myself to the dissemination of engineering knowledge, and, especially, to the instruction of younger

members of my profession in all its arts and traditions.

To my fellows I pledge, in the same full measure I ask of them, integrity and fair dealing, tolerance and respect, and devotion to the standards and the dignity of our profession; with the consciousness, always, that our special expertness carries with it the obligation to serve humanity with complete sincerity.

PROPOSE WATER-ALCOHOL INJECTION SYSTEM FOR USE ON MOTOR VEHICLES

Application to commercial motor vehicles of the wartime aviation technique of water-alcohol injection to produce greater power from lower octaine fuels, is suggested in an article published in the June Society of Automotive Engineers Journal.

The authors, A. T. Colwell, R. E. Cummings, and D. E. Anderson, all of Thompson Products, Inc., Cleveland, Ohio, describe water-alcohol injection as providing internal cooling, reducing detonation, and enabling the engine to work more nearly at full capacity. They say that the addition to commercial motor vehicles of an auxiliary fuel system supplying alcohol and water by injection through a device attached to the carburetor will make the efficient fuel immediately available when peak power output is required.

"Best gains are realized when fuel of approximately 1 octane numbers lower than the engine requirement is used", they add.

For purposes of injection, it is explained, ordinary drinking water is added to any blend of alcohols used for denaturing purposes, with a 50-50 combination producing the best results, which is said to include cleaner engine operation and freedom from detonation as well as increased power. Results are said also to indicate the possibility of designing lighter engines of higher compression ratios to produce greater power from lower-octane fuels, and to suggest the advisability of applying injection devices to the light engines of private planes.

NEW HELIUM PLANTS OF THE BUREAU OF MINES

By H. P. Wheeler, Jr., Petroleum Engineer, Petroleum and Natural Gas Division, Bureau of Mines.

Published by permission of the Director, Bureau of Mines, H. P. Wheeler, Jr., Petroleum Engineer, Petroleum and Natural Gas Division of the Bureau of Mines has an interesting article in the May issue of Mining and Metallurgy, in which he gives an interesting history of the development by the government of helium plants in this country since 1939. Supplementing the first helium plant built many years ago at Amarillo, Texas, the Government now has extraction plants at Exell, Texas, Shiprock, N. Mex., and at Otis and Cunningham, Kansas. In 1944, commercial distributors took twice as much helium, over two million cubic feet, as they did in 1943, and 1945 promises to be an even bigger year. Also, arrangements have been made to pump surplus production back into wells in the Government-owned Cliffside natural gas field near Amarillo, thus forming an immense underground cache of the element.

DECENTRALIZATION OF POWER

By Senator Joseph C. O'Mahoney

In a copy-righted article in Power Plant Engineering for May, Senator Joseph C. O'Mahoney expresses a highly controversial viewpoint which has a considerable following in many sections of the country. Senator O'Mahoney has represented Wyoming since 1933 and was Chairman throughout its existence of the joint Senate-House departmental Temporary National Economic Committee (TNEC). He is also Chairman of the special subcommittee on Industrial Re-organization of the Senate Committee on Postwar Economic Policy and Planning and a member of the Appropriations, Military Affairs, Judiciary, and other committees. When he instituted the TNEC he insisted on the word "temporary" because he wanted to make clear that the agency would do its job and then quit. The committee expired by operation of law on April 3, 1941, after almost three years of inquiry into the entire economic structure.

Senator O'Mahoney's article, which contains a great deal of matter on which serious thought could well be given, was prepared for Power Plant Engineering through the Institute of Business Economics and is copyrighted by it.

(Continued from page 6)

neers-in-Training" can therefore not be members of N.S.P.E. Member State Societies may however provide for "Engineer-in-Training" members provided at least 75% of the membership are Professional Engineers.

At least two methods of caring for the "Engineers-in-Training" exist.

(a) The formation of a separate but affiliated organization of "Engineers-in-Training". This is the New York method which has the advantage of encouraging these young men to meet with and participate in the discussions of the state society or any chapter thereof yet gives them a separate organization where they can meet and discuss their own problems without the embarrassment of the presence of the Professional Engineers.

(b) Setting up in the state society an "Engineer-in-Training" class of membership. This group might, perhaps, have all the privileges of membership except voting.

The New York plan has been carefully developed after consultation with the "Engineers-in-Training". It is not functioning now because the young engineers are in the Armed Forces. I am informed that it will become active as soon as the war is ended. This plan has great possibilities in New York State. In some states there will not be enough "Engineers-in-Training" to make this plan feasible. In these states the second plan should be followed.

The important thing is that in every state in which the "Engineer-in-Training" is provided for by law plans should now be made so that, when the war is over and our young men return to civilian work they will find a place prepared for them in or closely affiliated with their State Society of Professional Engineers. Remember the future of engineering as a profession and of our society depends on the success with which we inculcate the principles of professionalism upon the young engineers.

Book Reviews

THE NEW PLASTICS

By Herbert R. Simonds and M. H. Bigelow, assisted by Joseph V. Sherman.

In this practical, handy, 316-page book the new and vital advances in plastics and their technology have been organized for instant reference. Here is the latest information on the newest process developments — on molding, extruding, casting and laminating — on such new processes as fluid pressure bag-molding, electronic heating, jet molding, and many others. Here are full details of the chemical structure, methods of production, and properties of all the new plastics and related synthetic products — besides the most valuable facts and figures on their range of industrial usefulness, their advantages, their methods of fabrication, their trade names, their manufacturers, and a wealth of other date, technical, industrial and economic. Representative materials include polyethylene, Polectron, tetrafluorethylene polymer, the malamine resins, the new furane resins, the vinyl butyral resins, Papreg, Impreg, the new plywoods, synthetic rubbers, and a host of others.

316 pages. Cloth. 6x9 Illustrated $4.50
D. VAN NOSTRAND COMPANY, INC.

INDUSTRIAL PURCHASING

By Edwin Laird Cady

This book reflects the experience, not of one man, but of many in the proper handling of the purchasing function. In practical, down-to-earth language, with actual examples from varied types of industry, it explains the nature of the purchasing agent's job and its place in the industrial set-up. Furthermore, it tells how to meet and do business with salesmen; how to maintain the proper quantity and quality of supplies; how to conduct the interviews and conferences which are so much a part of the purchasing agent's work; how to determine what types of materials should be ordered, and when and how much, as well as which supplier should be given the order. All these and the many other aspects of the purchasing agent's job are described so that the book gives a broad over-all picture of the purchasing function and its importance in the cooperative world of industry today.

256 pages 5⅝ x 8⅜ $2.75
JOHN WILEY & SONS, INC.

THE BUILDERS OF THE BRIDGE

By D. B. Steinman

Brooklyn Bridge is the monument of two great Americans, John A. Roebling, and his son, Washington A. Roebling, whose genius and courage in the face of public skepticism and professional hostility made it one of the engineering wonders of the world.

The Builders of the Bridge tells the full story of two dramatic careers that had their climaxing in the building of the Brooklyn Bridge. As a rebellious liberal fleeing Prussian oppression, John A. Roebling came to Pennsylvania in 1831 and founded a farming colony. He had studied engineering and architecture under Rabe and Sluter, foundation construction and bridge building under Dietleyn, and hydraulics and dike construction under the celebrated Professor Eytelwein at the Royal Polytechnic Institute in Berlin. He had not been in America long before he saw that the country's greatest need was for canals, railroads and bridges to make its vast resources humanly useful.

Farming was not congenial to him however, and the inventor in him began to stir. He worked out a new boiler construction for steamships, he conceived a steam throttle to operate agricultural implements, he built a dye works, and ultimately evolved the idea of producing a wire rope of great strength combined with flexibility. After the revolutionary idea of wire rope, he sought for years to prove that suspension bridges could be built that would safely carry the heaviest loads over long spans. When others said it could not be done, he built a span over the Niagara River to carry railroad trains. After years of heartbreaking strain, he completed the Ohio River Bridge at Cincinnati. Finally came the opportunity to build his dream span, the Brooklyn Bridge. Working feverishly, he completed his plans, and then, within sight of his goal, a construction accident ended his life.

His soldier son, whom he had trained to be his successor, carried the task forward, working with his men over and under the river, until he fell a victim to the dreaded caisson disease. Bedridden, he continued to direct the work from his Brooklyn home overlooking the bridge site. In 1883, with the opening of the span, the world applauded the grace of the poem in concrete and steel that is world-famous as the Brooklyn Bridge.

The Builders of the Bridge tells the full story of the highly dramatic careers of the father and son that had their climaxing in the building of the Brooklyn Bridge.

457 pages 5⅝ x 8⅜ $3.50
Harcourt, Brace & Co.

INDUSTRIAL ELECTRONIC CONTROL

By W. D. Cockrell

Here is a direct, concise explanation of electronic control circuits and their practical applications in industry. Fundamental functions and basic circuits are emphasized, and these actions are illustrated by standard commercial devices in use today. Written for men who must sell, install, and service electronic equipment, this is a practical rather than a theoretical treatment.

Section one deals with the various types of electron tubes, vacuum and gas-filled tubes, grid-controlled tubes, special tube types, and their mechanical construction. Section two takes up circuit components, explains resistors, capacitors, inductances, and transformers and discusses combinations of component elements. In the next part basic electronic circuits such as rectifiers, amplifiers, oscillators, timing circuits, and phase-shift circuits are

described. The last section gives you examples of commercial electronic devices of types used in the machine tool, printing, processing, packaging, and other industries, and explains how these more complicated circuits can be analyzed by breaking them down into their component parts.

The appendix includes many tables, charts, formulas, and lists to furnish you with useful working information on the color code, ohmic values of resistance and reactance, photoelectric phenomena, standard curves, and other important topics. Industrial symbols for electronic devices are used throughout the text so that they will be familiar when found on wiring diagrams.

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A unique feature of this book is the fact that although contract procedure is developed along the lines of private practice there is also much information on U. S. Government contracts. Present and probable future emphasis on government-sponsored construction projects makes this an important aspect of engineering contracts.

The author recognizes the fact that there is no substitute for experience and engineering judgment in specification writing. Therefore, the instructions in the book are intended only as a basis for developing the ability to write specifications. Similarly, the treatment of legal considerations in construction work is intended to give the engineer a general understanding of the subject, rather than to fit him to act as his own attorney in legal matters.

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By Frank W. Curtis

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MECHANICAL AND ELECTRICAL EQUIPMENT FOR BUILDINGS

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The second edition of this book with its modern data should prove more valuable than ever. The entire text has been revised and the tables too have been brought up to date; many are now greatly enlarged.

Although the war emergency has to a great extent curtailed new developments in mechanical and electrical equipment for buildings, all advances that have been made are fully treated. The authors discuss these war emergency measures, as for example, the simplification of alternating types of equipment, or their complete elimination, and the effect of these measures. Possible trends after the war are also covered in considerable detail.

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This book contains the latest facts about rockets and jet-propelled planes, explained in clear, understandable terms. The first chapters deal with the rocket idea, its origin and gradual development. The construction and operation of battle rockets are described, among them the bazooka that played such an important role in World War II. There are chapters on the V-1 robot bomb and the V-2 rocket, on antiaircraft and aerial rockets, and on rockets for meteorological use.

Other chapters explain the practical aspects of jet propulsion, with detailed descriptions of the JP motor and British and American jet-propelled planes. One section deals with the rocket as a means of transportation and describes theoretical trips to other planets that may be possible in the distant future. There is information about the experimental programs and achievements of the American Rocket Society and other groups.

Dr. Zim's earlier books have established him as an outstanding writer on scientific subjects. One reviewer said of MAN IN THE AIR: "A clear, comprehensive and interesting presentation of aviation medicine for an extremely wide reading public." Another said of SUBMARINES: "Probably the simplest and clearest exposition of Naval submersibles ever written." In ROCKETS AND JETS Dr. Zim again presents complicated scientific facts with the lucid exposition which has contributed to the great success of his other books.

Illustrated with 41 drawings and diagrams by James MacDonald and with 52 photographs.

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What's New

(News from industry — gathered by the publisher)

BULLETIN ON NON-MAGNETIC USES OF MANGANESE STEEL

"Non-Magnetic Applications for Amsco Manganese Steel" is the title of the first comprehensive work published on that subject; a 32 page illustrated bulletin just issued.

Austenitic manganese steel has been widely adopted by industry during the past half-century for applications where high resistance to impact and abrasive wear is required. Important, but given less recognition until recent years, is the non-magnetic property of manganese steel. Ordinarily, nonferrous metals are adequate for such applications, but in an increasing number of cases the qualities of impact or abrasion resistance, or both, are essential for certain equipment parts requiring non-magnetism as well. In such cases the low strength, added to the high cost, of copper, brass, bronze and other nonferrous alloys makes them unsuitable, especially in the form of castings.

Austenitic manganese steel is an inexpensive but very strong and tough material for castings which must be substantially non-magnetic. Its permeability is so low that the attraction by a magnet is minute and generally is not detectable.

Presented in this bulletin are studies with illustrations of typical applications where non-magnetism and the ability to withstand shock and wear were equally vital factors in the selection of manganese steel. These applications include lifting-magnet cover plates, collector shoes, fingers for stator cores, magnetic separator drums and rollers, electric furnace parts, aircraft instrument testing devices and a number of railroad applications. These studies may point the way to the solution of many problems. The story of manganese steel and the research facilities of the manufacturer are also covered in the bulletin, which will be mailed on request.

For a copy of this bulletin, address American Engineer, reference No. 327.

"MADE-TO-ORDER" WATER

Raw water is quickly converted into chemically pure water, meeting predetermined specifications, through the use of a compact De-Ionization System, introduced recently.

The unit will deliver mineral-free water that is the chemical equivalent of distilled water in purity, and its output can be regulated as to the exact degree of softness, purity, or mineral content required for a wide variety of specific water uses.

Operating under commercial conditions, the system has yielded specification water at from 2c to 20c per 1000 gallons, costs varying with the mineral concentration of the raw water. In comparison with costs of distilled water, commonly ranging from 65c to $8.00 per 1000 gallons, the system demonstrated a consistent savings in water costs between 90 and 98 per cent.

Another advantage of the process is the use of a silica-free exchange material of high mechanical and chemical stability, which makes possible long "runs" between regeneration. Operation periods may be selected to coincide with availability of operators.

Fields in which the new system may profitably be applied are revealed by investigation to include; rayon Galley 33 — Engineer — Phil manufacturing, plating, paper and pulp, brewing and food processing, pharmaceuticals, ceramics, and others. Varied applications are the removal of simply hardness from water, reduction of bicarbonate alkalinity, reduction of total solids, and the recovery of valuable metals from waste water.

Units are now available for use in plants consuming a few gallons of water a day in laboratory use, and for plants where daily water consumption runs into millions of gallons.

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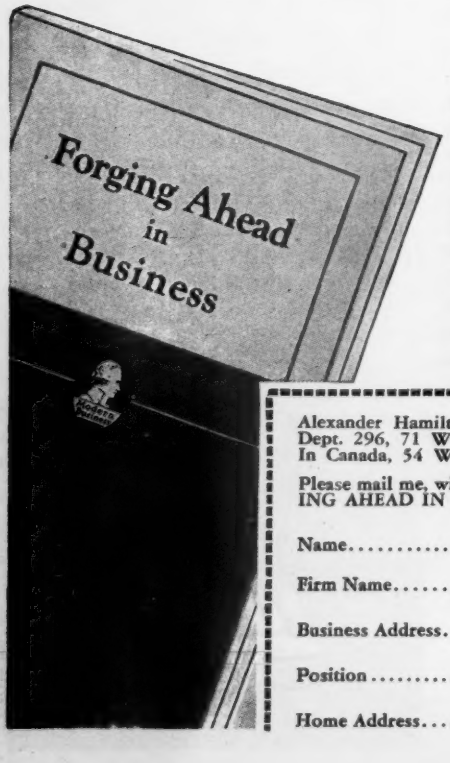

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POWER BOOSTER FOR INTER-COMMUNCATIONS SYSTEMS

This new and improved Power Booster enables the busy executive to now have both his office and factory at his fingertips without going through the central switch-board.

The Booster is capable of delivering a minimum of 15 watts "voice range" power. This is more than sufficient to cover the average paging system requirements, however more than one booster can be used in a system where greater power levels are necessary. In addition special type speakers are available for use with Boosters when necessary.

The Booster will work with the majority of intercommunication systems, however certain of the manufacturer's models have been specially designed so that when this model is used it becomes an integral part of the system, and not only gives the regular advantages of an office intercommunication system, but in addition paging facilities. The Booster is furnished complete with installation and operating instructions as well as a set of matched tubes. Operation is on 110 volts AC. 60 cycles.

For further information, address American Engineer, reference No. 329.

SQUARE FLAX PACKING

The development of a Square Flax Packing, made by a method not heretofore used in manufacturing flax packing, was announced recently.

In the manufacture of the new Square Flax Packing each strand is separately lubricated, each single strand of flax roving being put through a machine which forces high grade tallow under hear and pressure into the core of each strand of flax. After the flax strands are individually lubricated they are plaited to make finished packing. The result of this process is completely internally lubricated packing containing a balanced uniform amount of lubricant. Since each strand is separately lubricated,

it is claimed that it will remain soft and pliable for long periods of time and the finished packing will resist hardening.

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BUILT-IN TYPE THERMOSTAT

A new design feature is announced on a line of Thermostats and Thermal Timers. More positive, closer and quicker adjustments are said to be possible with this new feature.

Previously a lock nut was used for locking the adjustment screw. It was necessary to use a screw driver in one hand and a wrench in the other and in this method it was difficult to adjust the unit to tolerances of 1°. In the new design the lock nut is not necessary. The adjustment screw passes through two collinaer tapped holes on a "U" bent bracket. The "U" bend of the bracket imparts a strong spring action on the thread of the adjustment and prevents its turning by any but manual means. It affords closer adjustment, locks the screw more conveniently than a lock nut and insures against loosening due to vibration.

For further information, address American Engineer, reference No. 331.

HIGH LIFT POP VALVE

The development of a Pop Relief Valve which the National Boiler Laboratories, Ohio State University, reports has an exceptionally high clefficient of lift for the disc, is announced.

This high lift is secured through the unique design of the valve disc, by which the velocity of the fluid is entrapped and its kinetic force is converted into additional lift for higher relief discharge. The new pop valves (type No. 1800), designed for pressures up to 300 lbs., are already in extensive use on steam, air, gas, water and other liquid process lines. They are made in sizes ½" to 2½" and meet full ASME specifications.

The new valve is built with an adjustable single blow-down ring which permits regulation of the amount of pressure to be relieved on individual operations. Economical, minimum blow-down results — without interruption to plant operations due to unnecessary loss of pressure from relief action.

For further information, address American Engineer, reference No. 332.

HEAT REFLECTANCE

"New Approaches to Surface Protection" is the title of a 14-page booklet. It is primarily a technical discussion of highly desirable advantages ascribed to two protective coatings.

These protective coatings take advantage of properties of heat reflectance a hitherto overlooked principle by which a substantial amount of radiant heat energy is put back to work, instead of being absorbed by heat chamber linings.

A series of interesting new graphs show the relative reflectance values of different colors found in refractories and other heat-resisting surfaces. White and green are shown to have the highest heat reflectance properties.

This new treatise should prove interesting to engineers and executives, especially those faced with new and unfamiliar problems in heat resistance.

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It also describes the Manufacturer's facilities for the production of bevel, spiral, internal, spur and other gears.

For further information, address the American Engineer, reference No. 344.

AIR-COOLED HEAT EXCHANGER

This recently developed heat exchanger is used for cooling of condensing apparatus, as, for instance, jacket water or lubricating oil cooling or vapor condensing. It uses air as a cooling medium, and according to the manufacturer, is unaffected by high humidity.

It can be erected on the top of existing structures and is recommended for use wherever there is insufficient water supply, scale from bad or brackish water, difficult waste water disposal, high costs for water and pumping and limited cooling space available.

For further information, address the American Engineer, reference No. 342.

GRATINGS AND SAFETY STEPS

There has just come off the press a new catalog on Gratings and Safety Steps.

It includes complete technical data regarding grating sizes, standard panels, data on safety steps and complete safe load tables which will enable any engineer to select the most suitable standard type of grating for his particular requirements.

The catalog is well illustrated and will be of considerable value to any engineer.

For further information, address American Engineer, reference No. 335.

PUMPS

This 104 page catalog describes and illustrates the principle of operation, range of sizes, and specifications in both industrial and sanitary pumps produced by this manufacturer. Operating and construction features, emphasized with cutaway views of different models, dimension and installation diagrams, horsepower charts, equivalent, and friction loss tables are also included. Materials recommended for pumping various liquids are listed, together with typical installations, and plant views.

For further information ,address American Engineer, reference No. 336.

WATER GAUGES

An 8-page booklet describing a line of adjustable split gland inclined water gauges made of bronze and forged steel construction, for pressures up to 900 pounds per square inch, has just been released.

It also illustrates the same manufacturer's adjustable gauges set in a vertical position.

For further information, address the American Engineer, reference No. 343.

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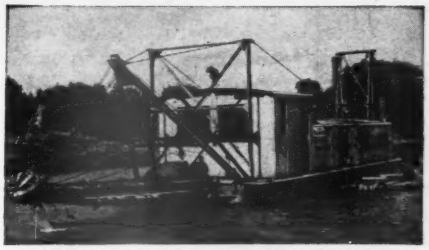

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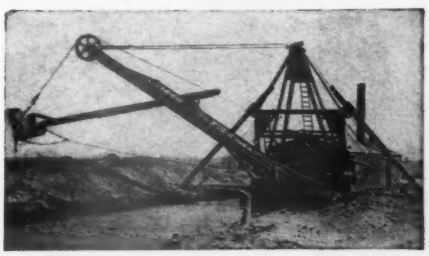

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This recently published 12-page, 2-color catalog describes a complete line of tested devices for the protection of operating equipment connected with the piping systems utilized in industrial, processing and powerplants.

The catalog features a complete line of suction and pressure line fittings such as Duplex Vertical and Horizontal Chamber Type Strainers, "Y" Strainers, Angle Type Strainers, 90° offset pressure and 180° straight-through pressure strainers, and remote valve control assemblies.

Other products described are interceptors for grease, wax, fats, oils, lint and solids such as metals, plastics, glass etc.; vents, valves and drains.

For further information, address American Engineer, reference No. 337.

INDUSTRIAL THERMOMETERS

A new 64-page comprehensive catalog of high accuracy mercurial Industrial Thermometers and related instruments is now available. The instruments illustrated and described cover a wide range of industrial uses, including power plants, chemical and process industries, refrigeration, air conditioning, food processing, warehouses, paint and varnish manufacture, pipe lines, pumps, stills and boilers and similar applications. Data is complete and factual for use, specifications and installation.

For further information, address the American Engineer, reference No. 339.

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For further information, address the American Engineer, reference No. 341.

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